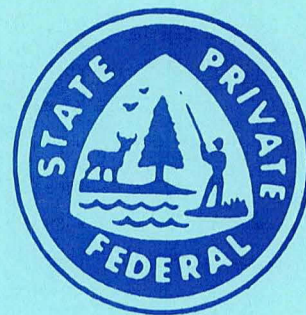
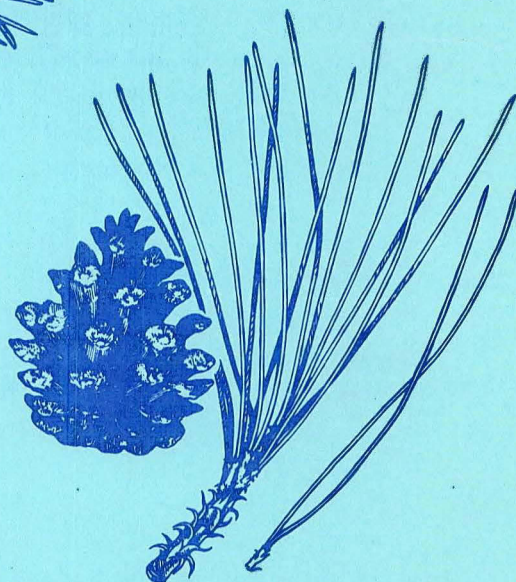
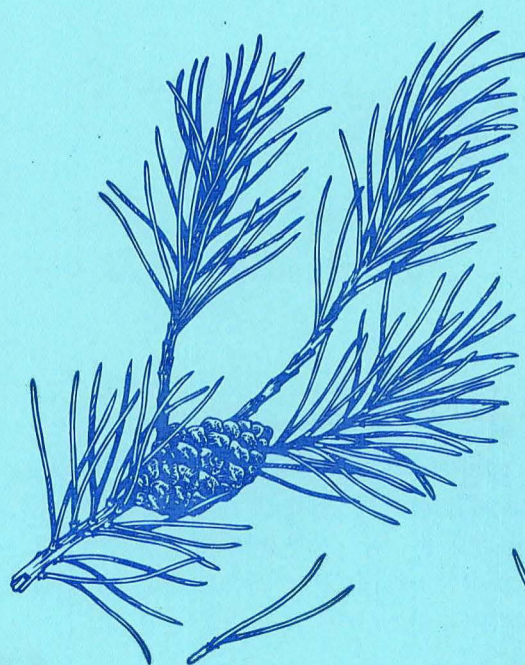


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LAKE STATES NURSERY EVALUATION

by

LLOYD R. CASEY
Nursery and Reclamation Specialist

June 1979

Northeastern Area, State & Private Forestry
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INTRODUCTION

In an effort to monitor the cost effectiveness of the Forest Service nurseries, Region 9 undertook "An analysis of the Forest Service Nurseries in the Lake States." During the review of the analysis, S&PF was requested to provide detailed information on the state nurseries production, costs, and potential within Michigan, Minnesota, and Wisconsin.

In light of Deputy Chief Leisz's November 27, 1978 memo, concerning "New Ways of Doing Business," all alternatives to producing tree seedlings must be explored completely, in order to select the least expensive method. The use of oil is costing more which leads to exploring ways in which less oil is consumed to produce and transport seedlings.

During 1978 Region 9 reforested 52,259 acres with approximately 9,687,000 seedlings of which 1,622,000 came from state nurseries. The National Forests within the Lake States accounted for the majority of the reforestation accomplishment with 7,686,000 seedlings planted (Forest Service 1978).

The seven state nurseries produced 35.6 million seedlings during FY 1978 that were planted on state, industry, and private lands within the Lake States (Table 1).

HISTORY

The National Forest System in the Lake States planted 27.6 million trees in 1968 and have slowly decreased planting to 7.4 million, a decrease of 71% in 1978. During the same period, the States went from 49.3 to 30.4 million, a decrease of 39% (Figure 1).

The Forest Service decline is generally attributed to the completion of the reforestation of plantable areas. The states have also been successful at reforesting the old fields and major plantable areas; in addition the Agricultural Conservation Program was terminated in 1973 which caused a major drop in reforestation by the private sector. The program was reestablished a year later and reforestation went back up to the previous level. Individual nurseries have had production problems as has the Forest Service which has caused a fluctuation in the seedling production.

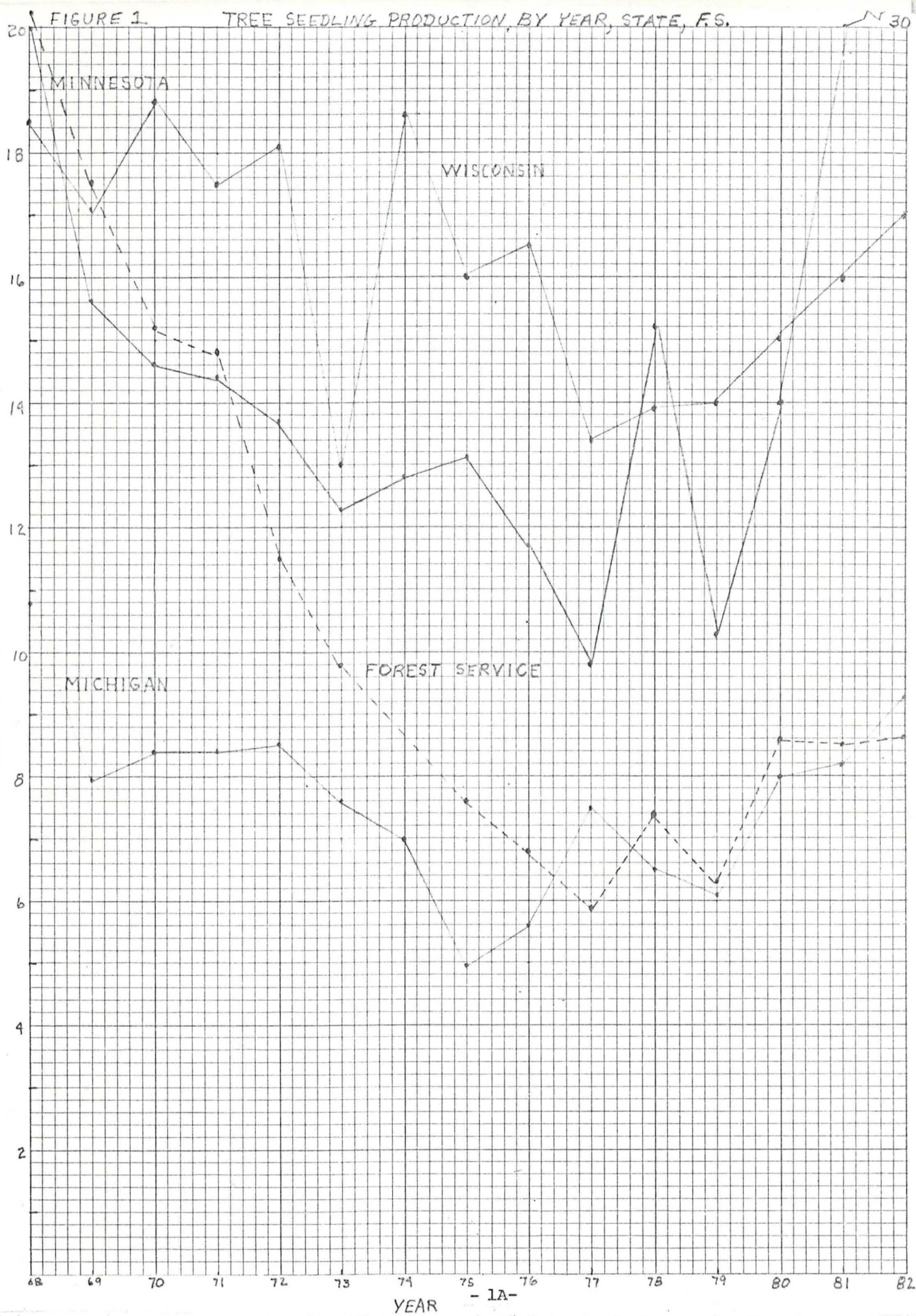
The major change has been in the surpluses of seedlings left at the end of the shipping season. In 1968 states carried as high as 2 million seedlings at the end of the shipping season. In 1978 all state nurseries were sold out of all major species. High production costs, decreasing government budgets and lower sales volume have forced the nurseries to plan production more carefully and control waste. Cost accounting methods have improved and in many instances costs not related to nursery production have been found.

FIGURE 1. TREE SEEDLING PRODUCTION, BY YEAR, STATE, F.S.

30

SEEDLING PRODUCTION (MILLION)

10th LINE HEAVY



PRESENT SITUATION

Today the forest seedling nursery in the Lake States is an established, integral part of the timber production program with broadened purposes including wildlife habitat development, prairie reestablishment, wind and water erosion control and aesthetic enhancement.

All states are anticipating an increase in the demand for seedlings within the next five years for various reasons.

Minnesota is anticipating the largest increase due to the passage of PL 95-495, The Boundaries Waters Canoe Area Wilderness Protection Act; that will stimulate tree seedling demand up to 42 million seedlings per year by the end of 1985. The new Minnesota Governor has already asked the legislature for the State's share of the cost of the first phase of the Act.

Wisconsin has experienced increased pressure from forest industries to produce more tree seedlings. While not the anticipated demand of Minnesota, nearly 20 percent increase has been predicted by 1982.

Michigan is experiencing similar demands and in fact has one contract with Meade Corporation for the production of 1.5 million red pine seedlings per year.

If the predicted demands for all nurseries are correct, the Forest Service's portion of the total Lake States Area production will go from 42 percent in 1968 to 15 percent in 1982 (Figure 1, Table 1).

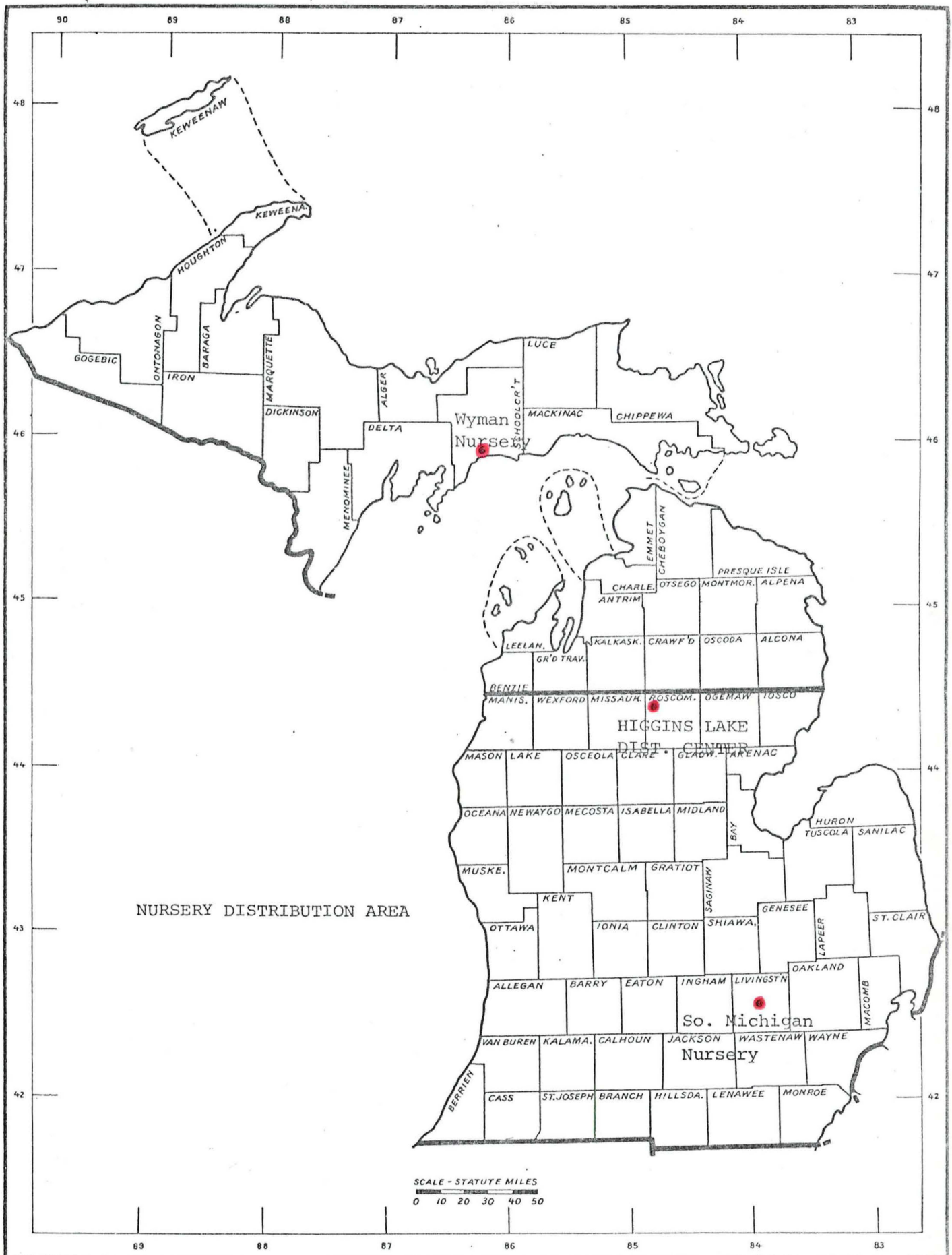
DESCRIPTION OF NURSERIES

All of the nurseries within the Lake States area are basically equipped to do an adequate job of raising good reforestation material. The Forest Service nurseries are funded at a higher level than the state nurseries and buildings and equipment are more up-to-date. However, the states in general have lower pay scales for labor and are more flexible in shifting labor from the nursery to other state functions (Table 2).

MICHIGAN

The State of Michigan maintains two nurseries, Wyman Nursery at Manistique in the Upper Peninsula, and Southern Michigan Nursery at Howell, near Lansing (Figure 2). The Michigan nurseries are producing fewer seedlings than the other nurseries. However, costs are kept at a minimum by incorporating other operations at the nursery during the winter months; by limiting labor; and by using inmate labor at no cost to the nursery.

FIGURE 2
MICHIGAN



WYMAN NURSERY

Wyman Nursery was originally constructed by the U.S. Forest Service in 1933 and operated it until 1950. The State leased the nursery until 1970 when it was acquired outright.

Wyman is basically the same facility that was built by the Forest Service. Cold storage and packing shed have been added and a new equipment building was added about 1970 (Hanks 1972). Approximately 47 acres are under irrigation out of 100 acres within the nursery. The soils are a loamy sand and the site has very few drainage problems. Any future expansion would have to be to the north across the Manistique River. The irrigation equipment is the original equipment of the riser-skinner type and the Manistique River is the source of irrigation water.

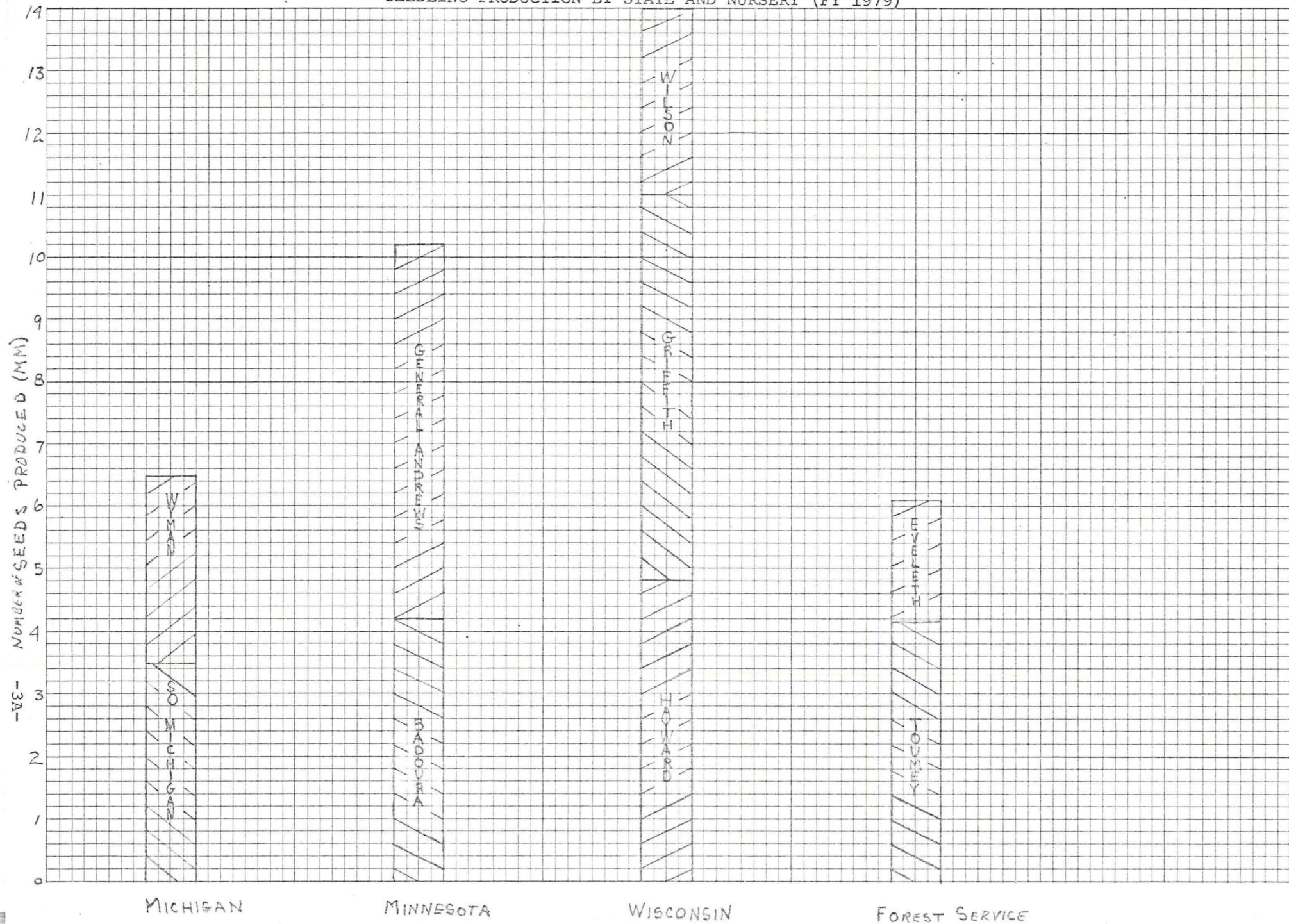
White pine (3-0), red pine (3-0), Scotch pine (2-0), jack pine (2-0), and white spruce (3-0) are raised at Wyman. The majority of the customers are the State forests, Soil and Water Conservation Districts (SWCD), and from industry. Generally the orders are 10,000 seedlings or more in size and are economical to handle. Presently the production is approximately 3 million seedlings (Figure 3). Trees are shipped both fall and spring.

The costs of production are kept minimal by shifting the permanent labor to other State operations when the nursery is not open. During the winter months only the nurseryman is on duty at the nursery. The supply of labor is excellent and, unlike most areas, the wage of \$3.80 per hour attracts good quality labor. Schoolcraft County had an unemployment rate of 24 percent as of January 1979. In addition to paid labor, county welfare recipients are utilized in the weeding operation at no cost to the nursery. During the lifting and shipping season eight full time people are employed, supplemented with 40 to 50 part-time laborers of which 70 to 80 percent were women.

Wyman is located near the shore of Lake Michigan which moderates the micro-climate of the area. The snow fall is more than adequate to provide a protective cover for the seedlings during the winter months and prevents a deep penetration of the soil by frost. Often Wyman can lift in the spring before Southern Michigan. The Wyman's lake location moderates the weather when compared with the Toumey Nursery. Wyman does not get as cold in the winter nor as hot in the summer; as a result, the growing season averages 21 days longer at Wyman than at Toumey which is less than 15 miles north latitude of Manistique. In contrast the Southern Michigan Nursery, some 200 miles south latitude of Wyman, has only five more days of growing season* (Table 3).

* The growing season is the time between the last killing frost in the spring and the first killing frost in the fall (Yearbook 1941).

FIGURE 3
SEEDLING PRODUCTION BY STATE AND NURSERY (FY 1979)



Since the nursery is now 46 years old, there is a need for a certain amount of maintenance to be done and a major updating of equipment. A new Grayco harvester has been purchased that will facilitate lifting and the amount of labor required will be decreased. The packing operation will be updated in the future to further maximize production. There is no seed storage or seed extraction capability at Wyman. The State of Michigan presently purchases seed processing service from the Eveleth Nursery (\$6,000+ worth in 1978). The Wyman Nursery provides 20 percent of their cold storage to the Forest Service free-of-charge.

The seedlings are shipped from the nursery by nursery truck to county pick-up points; by the Soil and Water Conservation Districts (which pass costs on to its customers); prepaid United Parcel Service; and some seedlings are picked-up at the nursery by the customer themselves.

SOUTHERN MICHIGAN NURSERY

Southern Michigan was constructed in 1957 on 80 acres of sandy loam of which 63 acres are irrigated seed beds. Present production is 3.5 million trees with a potential production capacity of 10 million 3-0 conifers. The species grown include: red pine (3-0); white pine (3-0); white spruce (3-0); Norway spruce (3-0); jack pine (2-0); autumn olive (2-0) (1-0); multiflora rose (2-0) (1-0); dogwood (1-0); wild grape (1-0); buffaloberry (1-0); Siberian crabapple (1-0); honeysuckle (1-0); Washington hawthorne (1-0); tulip poplar (1-0); white oak (1-0); black locust (1-0); hard maple (1-0); black walnut (1-0); black cherry (1-0) red oak (1-0), and white ash (1-0) (2-0).

Sources for irrigation water are two wells. Although there are more drainage problems here than at Wyman, they generally do not occur during the growing season. Lifting is sometimes affected by the muddy conditions (Hanks 1972).

Direct costs are minimized by the use of correctional inmate labor. These people are paid 50 cents a day, plus an accumulation of "Good Time", that allows them to reduce sentences if their work at the nursery is satisfactory. Full-time personnel include: the nurseryman; foreman; part-time clerk, and two permanent workers.

During the winter months the nursery is devoted to the manufacturing of signs for all the DNR properties and the assembly of "Michigan Rock Sample Collections" for the Geology Division. This enables the nursery to utilize the permanent personnel in other operations and to reduce fixed costs by charging a portion of the depreciation on buildings and equipment to other functions. Although the quality of the labor is low, so is the cost.

Southern Michigan orders average less than 1,000 seedlings per customer and the majority of the orders are handled here. The whole program serves 5,500 orders for an average of 1,182 seedlings per order. The processing costs per order are higher here than at Wyman. Trees are ordered through the State office in Lansing. A xerox copy of the order is sent to the nursery for processing. Lansing keeps all inventory records for both nurseries. White pine, white spruce, and Norway spruce cost \$35/M; jack pine is \$20/M, and red pine is \$30/M. Hardwood tree seedlings are \$50/M, except for walnut which is \$100/M. Shrubs are sold at \$24/M.

The shipping of seedlings is accomplished in the same manner as Wyman; however, UPS does more of the shipping at Southern Michigan than at the northern nursery.

The climate and the sandy loam site is conducive to the growth of hardwoods. All hardwoods can be produced in one year. Wilson Nursery in Wisconsin is the only other government-owned and operated nursery within the Lake States with this capability at the present time.

The present production could be doubled, but the inmate labor would have to be supplemented by outside labor. The available labor in the area is inadequate to do this. The unemployment rate for January was 6.3 percent and the starting wage for the local industry is \$4.50 per hour. In order to expand production the State would have to raise its starting wage to at least \$4.50 and they would be able to obtain good female labor. However, females may not be willing to work side by side with the inmates. The two types of labor may have to be segregated in order for the operation to be successful.

SEED SOURCES

From Table 4 the seed sources used in Michigan can be determined. The State's tree improvement program is in its infancy, but local sources are presently being used. Jack pine seed orchards have been established by Michigan State University and will soon be into production. The tree improvement plan is now being written and will soon be implemented. Seed production areas have been established for many of the wildlife species.

STATE LAW

The Michigan law requires that the seedlings be sold at a price approximate to the cost of production and the surplus can be sold outside the State of Michigan; however, all funds received are placed in the State's General Fund and are not credited back for nursery operations. Seedlings can not be used for ornamental or shade tree use, nor resold with the roots attached. Christmas trees can be sold as part of a thinning operation, but at least 600 trees per acre must be left to grow into pulp or lumber products.

WISCONSIN

The State of Wisconsin operates three nurseries; Hayward Nursery in northwestern Wisconsin, Griffith Nursery in the center of the State, and Wilson Nursery in southern Wisconsin. The State's production is approximately 14 million seedlings which falls short of the present demand (Figure 4).

HAYWARD NURSERY

Hayward Nursery was constructed by the U.S. Forest Service about 1937 and has been operated by the State under license for the last 18 years. Negotiations between the State of Wisconsin and the U.S. Forest Service are presently being undertaken for the purchase of the nursery by the State.

Hayward contains approximately 116 acres of which 51 acres are in seed beds. The capacity of the nursery is 10,000,000 seedlings and transplants (Table 3). With expansion of the irrigation system the production potential is 12,000,000. Present production is almost 5,000,000 plants that include: jack pine (2-0), red pine (3-0), white pine (3-0) (2-1), white spruce (3-0) (2-2), Norway spruce (3-0), white cedar (3-0), red oak (2-0), white oak (2-0), and hard maple (2-0).

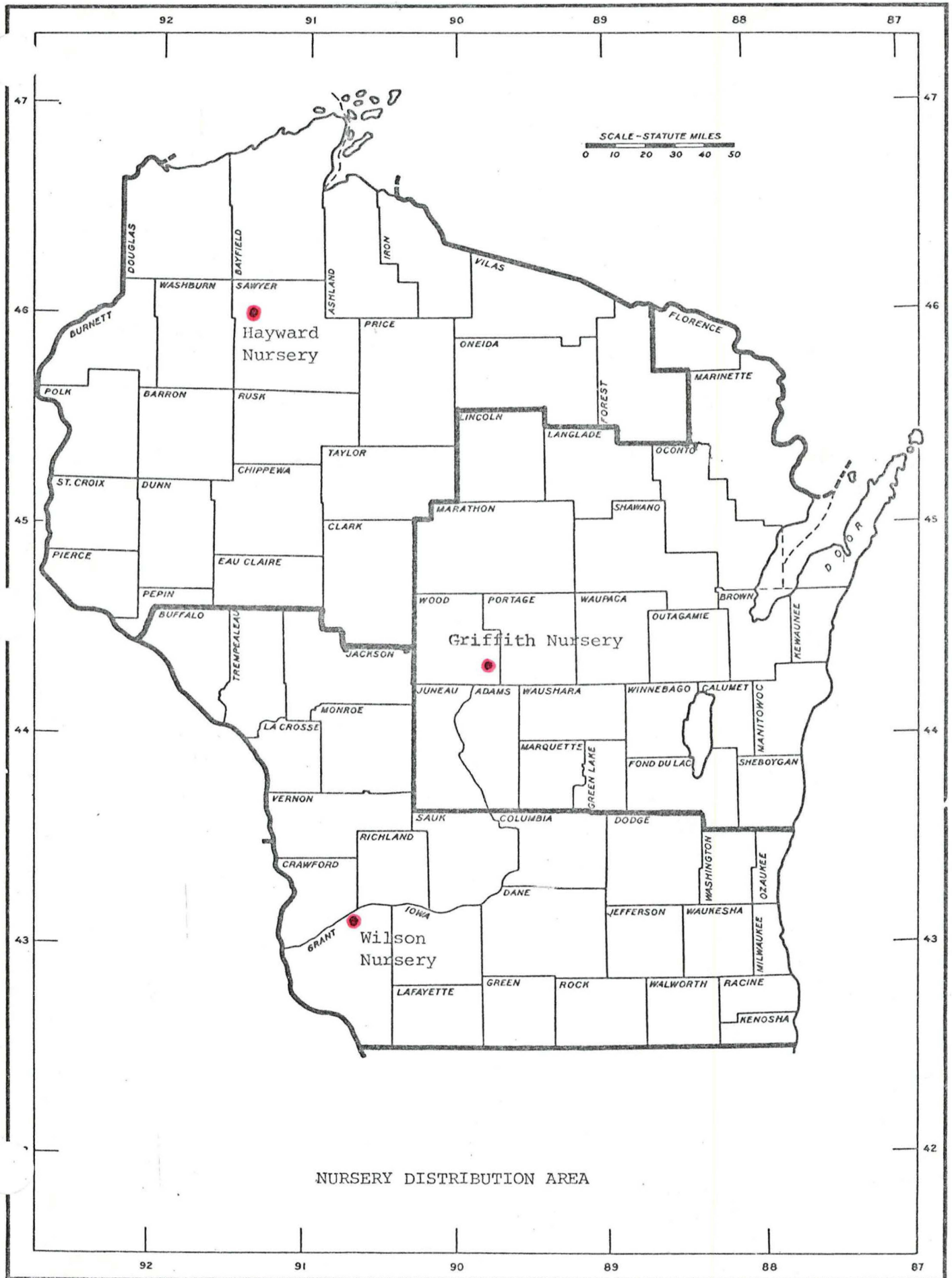
The site of the nursery is on the Namekagon River and has a sandy loam soil. Drainage is generally good and the nursery is well-equipped and the buildings are in good repair. Hayward has the best equipped seed extractor in the Lake States and has room to double the capacity of the facility, although a cone storage shed is needed to complete the system.

The labor supply is adequate but not plentiful. The unemployment rate is 12.7 percent. The temporary spring labor consists of individuals that migrate from the nursery, to resort work, to the cranberry harvest, to the wreath factory, to unemployment and cycle back to the nursery. The hourly wage for temporary labor is \$3 per hour. Experienced workers may receive as high as \$3.50 per hour.

Hayward distributes seedlings to 22 counties in the northwestern part of Wisconsin. The growing season consists of approximately 112 days which is about the shortest in the region; for this reason some of the hardwoods are grown to 3-0 to attain the proper planting size.

All buildings and equipment are in good repair and the layout is conducive to good production flow. The irrigation system is presently being revamped with modern "Rainbird" sprinkler heads replacing the antiquated oscillator system.

FIGURE 4
WISCONSIN



The present full-time personnel include: a nurseryman, clerk, and two technicians. Four seasonals are hired along with 60 "limited term" employees for the lifting and shipping season, the period from April 1 to May 30 (Table 2).

Customers can choose to have the trees counted and graded or the seedlings can be purchased "bed run." The cost differential is \$20 per thousand.

The trees are shipped by the nursery to county "pick-up" points. Some seedlings are picked up at the nursery by the customer.

The Hayward Nurseryman coordinates the tree improvement program, as well as seed procurement for the nurseries. Table 4 shows the seed sources presently used in the program. Wisconsin presently maintains 48 acres of red pine seed orchards and has contracted with the University of Wisconsin to complete the tree improvement plan for DNR.

GRIFFITH NURSERY

The Griffith Nursery is located in the center of the State near Wisconsin Rapids (Figure 4). This nursery distributes seedlings to the northeast portion of the State. Griffith is situated on 100 acres of Plainfield sand of which 80 acres are under irrigation.

The physical plant was built in 1934 and has been updated as needed through the years. Present needs include remodeling of the irrigation system and an addition of more cold storage units. Both items are being undertaken at the present time. Present production is almost six million seedlings. An additional million could be produced if needed. The nursery is presently surrounded by urban sprawl and industry. There is no further opportunity for expansion.

Griffith draws its irrigation water from NEPCO Lake and drainage is excellent. The climate is conducive to good conifer production with 136 days of growing season. Precipitation is adequate at 31.9 inches, of that amount adequate snow fall protects seedlings from winter burn.

The temperatures have a wide range of extremes. Average January temperature is 12.9°F with July's at 70.1°F.

This nursery produces red pine (2-0) (3-0); white pine (3-0) (2-1), white spruce (3-0) (2-2), Norway spruce (3-0), white cedar (3-0), jack pine (2-0), hard maple (3-0), white ash (2-0), red oak (2-0), and white oak (2-0). Growing the hardwoods to 2-0 is very expensive as are the transplants that are produced.

The present nursery personnel include: nurseryman, clerk, secretary, foreman and seven seasonals. During the shipping season 80 to 90 temporary laborers are hired. This labor is hard to obtain; the unemployment rate is 7.7 percent and the present wage of \$2.90 to \$3.50 is not attractive enough for the area. Those that do work temporarily at the nursery go on to the cannery, to the cranberry harvest, to unemployment and back to the nursery. The YACC program provides a limited amount of non-technical labor during the summer months.

As with Hayward, the seedlings are distributed by county trucks and "will call" orders. "Bed run" orders are also accepted at the nursery.

The nurseryman at Griffith is also the coordinator of the ordering and distribution of the seedlings. All orders go to Griffith, who in turn directs to the proper nursery and keeps track of the inventory. Wisconsin services approximately 6,000 orders per year for an average order of 2,333 seedlings.

WILSON NURSERY

Wilson Nursery is located at Boscobel, Wisconsin in the southern part of the State. Situated along the Wisconsin River, the soils are alluvial Sparta loamy fine sand. The nursery was built in 1953 and contains an up-to-date facility. All buildings are in good repair and the equipment is more than adequate to do the job.

The nursery presently consists of 100 acres of which 72 acres are under irrigation. An additional 80 acres to the west could be used for expanded production if the need arises. The present production consists of approximately 3 million seedlings. Species grown include: red pine (2-0) (3-0), white pine (3-0) (2-1) (2-2), white spruce (3-0) (2-2), Norway spruce (3-0), white cedar (3-0), jack pine (2-0), black walnut (1-0), hard maple (3-0), white ash (2-0), red oak (2-0), white oak (2-0), multiflora rose (1-0), ninebark (1-0), dogwood (1-0), autumn olive (1-0), cranberry (2-0), crataegus (1-0) and prairie grass. An additional three million could be grown under present conditions and facilities. The expansion potential, by bringing another 80 acres under irrigation (presently managed by wildlife) and the purchase of another 80 acres to the east, would be 10 million more seedlings.

The labor supply is adequate at the \$2.90 to \$3.50 per hour rate; however, it might be difficult to obtain more labor if major expansion were to take place. The unemployment rate for the county is 5 percent and there is some light industry in the area; however, most of the people are in agribusiness in one form or another. The availability of supplies is good and equipment is rented for short term needs that does save funds for other purposes. There is a local State-owned source of peat that is used for organic matter supplement.

Wilson distributes seedlings in the southern half of the State and raises the majority of the hardwoods and shrubs. The climate and soils are conducive to the raising of the hardwoods and with a few major cultural changes they all could be produced as (1-0). The growing season is 155 days which is the longest of all the Lake States Nurseries (Table 3). This could provide an opportunity to grow red pine in two years rather than the three years presently being practiced.

The personnel at the nursery include: one nurseryman, one foreman, eight seasonal (seven months or less), and two permanent employees. During the shipping season 70 to 75 women are hired. Shipping is accomplished in the same manner as the other two nurseries within the State.

The cost of production in Wisconsin is higher than the other two states for several reasons. There have been many items charged up to nursery operations that are not part of the nursery program. For example, the nursery office at Griffith was moved and the building remodeled as a District Headquarters. The cost was charged to the nursery. The seed costs, due to accounting procedures were charged for twice, once during extraction and once during seeding. Although a storage and shipping charge should be included, at the time of seeding, the total cost was being charged twice. Both of these examples have been corrected and accounting procedures have been brought into proper alignment. It is expected the future costs will go down somewhat. The raising of hardwood tree species to 3-0 is very expensive. The production of 1-0 hardwoods and 2-0 red pine would also lower costs. The main difference between Minnesota and Wisconsin costs are that Minnesota produces approximately the same number of seedlings on two nurseries as Wisconsin does with three nurseries.

STATE LAWS

The Wisconsin State law was amended August 1977 to include the following regulations:

1. Species grown shall be limited to trees and shrubs normally used for forestry and wildlife plantings.
2. No shipment of less than 500 trees will be made to an applicant other than packets for wildlife, windbreaks, shelterbelts, and erosion control.
3. Seedlings should not be made available to commercial or municipal nurseries for lining out stock.
4. Trees may be cut for Christmas trees, but the plantation shall not be reduced below 500 trees per acre. (This may be changed.)

5. Free trees can be made available to educational institutions, youth groups, lessors of public hunting and fishing grounds etc., provided the department is assured that the project will have adequate supervision. (This may be changed.)
6. Sale price is approved by the Department (the policy of the DNR says that the selling price shall be the approximate cost of production).
7. Seedlings inventories exceeding sales and allotments may be sold or traded to other states or the U.S. Forest Service.

THE ORDERING OF TREES

Trees are ordered through the district foresters, area foresters or county agents. The orders are sent to the Griffith office for inventory control. The nurseries receive a copy of the order from Griffith.

MINNESOTA

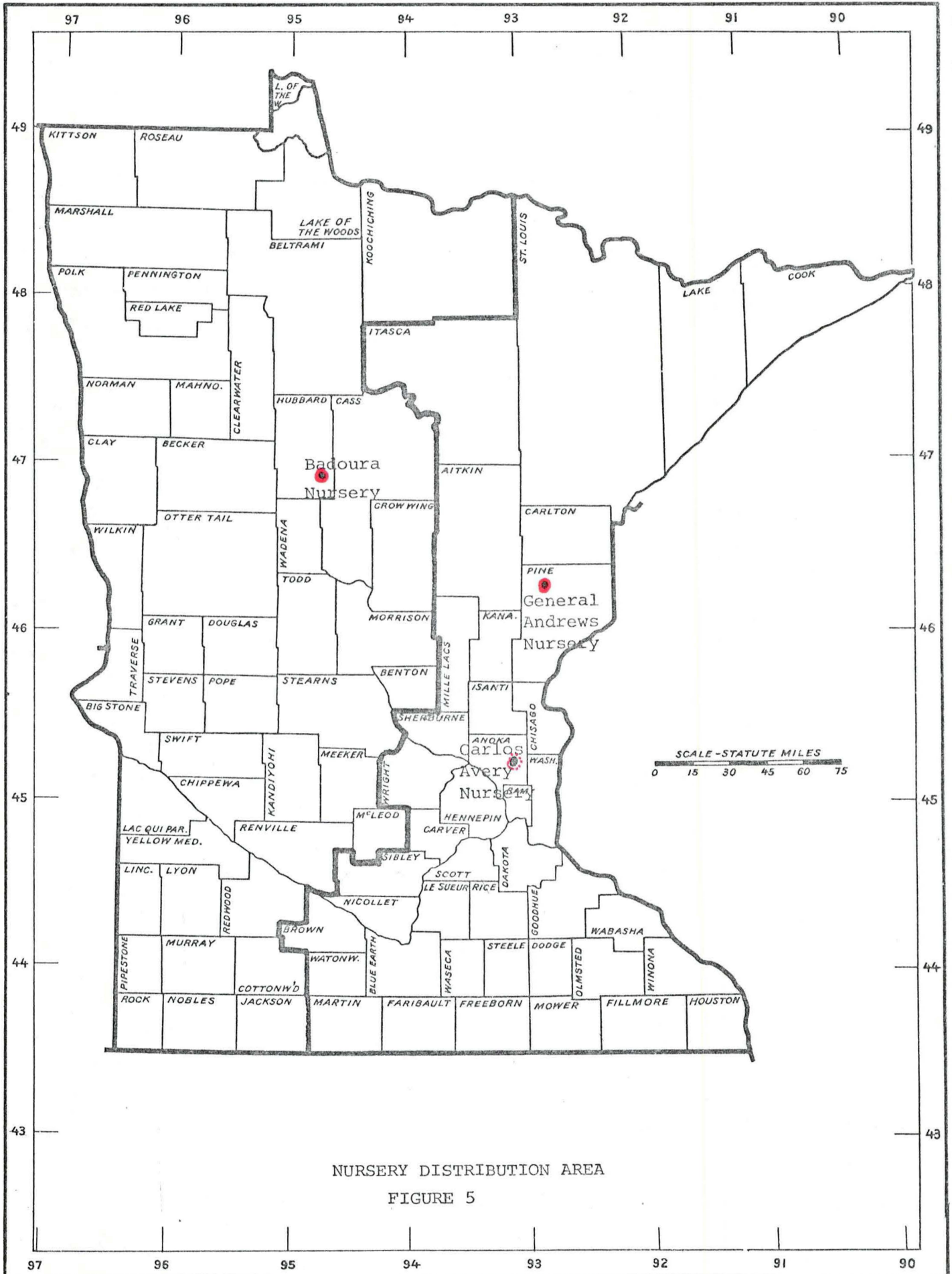
The State of Minnesota operates two nurseries and has a third one on "ready stand-by" (Figure 5). The present production (1979) is approximately 10.5 million seedlings servicing approximately 3,500 customers for an average of 2,943 seedlings (Figure 3).

BADOURA NURSERY

The Badoura Nursery is located in Hubbard County in the northcentral portion of the State and services the western half of the State. The nursery is located on 320 acres of sandy soil of which 120 are in production. Badoura started production in 1931 by the State of Minnesota and has continued production since that time.

The nursery has its own source of high quality peat that is used for an organic additive, as well as a mulch. The nursery also has its own sawmill from which packing sticks, bed boards and other material are cut during the winter months. Other facilities include cold storage units, cone storage building, a seed extractory, a shop, seed storage unit, greenhouse, warehouses, and two residences. The sources for the irrigation water are four wells. The skinner type irrigation is used, but the unavailability of replacement parts necessitates hand turning to accomplish equal water distribution. Badoura is a well-equipped up-to-date nursery.

MINNESOTA



The climate is rather cool with an average July temperature of 68.6°F and average January temperature of 4.4°F. The growing season averages 126 days and precipitation averages 24.7 inches. Shipping season usually runs from the latter part of April until June 15 (Table 3).

The present production includes: Norway (Red) pine (3-0)(2-2), white pine (3-0)(2-2), Scotch pine (3-0), jack pine (2-0), ponderosa pine (3-0), white spruce (3-0)(2-2), Black Hills spruce (3-0), Colorado spruce (3-0)(2-2), Norway spruce (3-0), white cedar (3-0), red cedar (3-0)(2-2), green ash (2-0), red oak (2-0), ginnala maple (2-0), caragana (2-0), honeysuckle (2-0), hackberry (2-0), sand cherry (2-0), wild plum (2-0), Russian olive (2-0), autumn olive (2-0), poplar (1-0), and mountain ash (1-0). Approximately 4.5 million trees were sold in the spring of 1979 which was down from last year's seven million. Drought in spring of 1976 caused the shortages this year.

There is an excellent supply of labor in the area. The beginning wage is \$4.94 per hour and an unemployment rate of 11.7 percent creates in the local people a strong desire to work at the nursery. Sign-ups for employment take place in January for the spring season. The supply of labor is at least twice the number needed. As a result, high quality labor is obtained.

The nursery presently employs: a nurseryman, an assistant nurseryman, a foreman, secretary, mechanic, two technicians, and two seasonal workers. During lifting and shipping 80 to 100 people are hired of which 15 are men and the rest are women. Other programs that furnish labor periodically include: MINNCEP, BICAP (Community Action Programs), and the Concentrated Employment Program (Table 2).

The production at Badoura can be increased to 20 million with the present facilities. An additional 10 million could be produced if new ground were to be developed and put under irrigation.

Distribution of the seedlings is accomplished by county trucks that are contracted by the local counties. People are also welcome to pick-up individual orders at the nursery. The seedlings are counted and graded in the field as they are lifted, then "heeled in" in the beds until the packing is ready. The nursery ships up to 400,000 seedlings per day in a jelly roll bale using a modified Allis Chalmers hay baler.

General needs at the nursery include remodeling of the irrigation system because parts are no longer available for the oscillators and the seed processing demand has exceeded the capacity of the present extractory. Since Wisconsin has the capacity, this may be an opportunity for interstate cooperation. If Minnesota contracted with Wisconsin to do the seed extraction, Wisconsin's operation would be more efficient and Minnesota would not have to construct a new extractory at a substantial savings.

GENERAL ANDREWS

The General Andrews Nursery, which services the eastern half of the State, is located at Willow River in east central Minnesota (Figure 5). The nursery was built in 1938 by the State and is presently producing approximately six million seedlings.

The nursery contains 266 acres of which 157 acres are in production. The nursery is situated on sandy soil and uses three wells as a source of irrigation water. Approximately 20 million seedlings could be produced with the present facilities. There is no land available for further expansion beyond the present boundaries.

The Andrews Nursery is well-equipped and has recently built a new cold storage facility. The office and soils lab were built within the last ten years. Other facilities include: lunch room, packing building, warehouses, seed storage freezer, chemical store room, and a new greenhouse.

The climate is very similar to Badoura's. The growing season averages 123 days and the amount of snowfall is adequate for protection of the seedlings and prevention of deep frost penetration. The average July temperature is 68.6°F and January's is 8.8°F. The total annual precipitation is 26.3 inches (Table 3).

The species grown include: balsam fir (3-0), ponderosa pine (3-0), Norway pine (2-2) (3-0), white pine (2-2) (3-0), Colorado blue spruce (3-0) (2-2), jack pine (2-0), Norway spruce (2-2) (3-0), black walnut (1-0), sand cherry (2-0), yellow birch (2-0), green ash (2-0), white cedar (3-0), red cedar (3-0), soft maple (2-0), poplar (1-0), butternut (2-0), honeysuckle (1-0), canagana (1-0), Russian olive (1-0), ginnala maple (1-0), buffalo berry (1-0), lilac (1-0), red oak (2-0), and pin oak (2-0).

The labor situation is much like Badoura. The unemployment rate is a little lower, 11.1 percent versus 11.7 percent, but the labor supply is more than adequate and is not a limiting factor (Table 3).

The nursery staff consists of the nurseryman, an assistant, a repairman, a secretary, and three technicians. During the busy season in the spring, 100 people are hired; of those, 85 are women. Approximately 25 of the laborers are hired for the summer months' work. The lifting, packing, and distribution of the seedlings is handled in a similar fashion to Badoura's.

The needs of General Andrews Nursery are in the area of up-dating rolling stock and some of the beds are in need of leveling to improve drainage.

CARLOS AVERY NURSERY

Minnesota has a third nursery at Forest Lake, Minnesota, that is presently on a "stand-by" status. The Carlos Avery Nursery was closed in 1977 as an economy move. The nursery could be opened up with the purchase of some new equipment and the hiring and training of new personnel. It would seem difficult to justify the opening of this nursery until the present nurseries have reached capacity production.

STATE LAWS

By law, the State of Minnesota must charge at or near the cost of production. Costs are figured every year and those figures are used in figuring the prices of the seedlings the next shipping season. Approximately 30 species of tree and shrub seedlings are grown, as well as a small amount of prairie grass seed. This volume of species makes cost accounting by species difficult, so for simplification, there are three costs on the price list: coniferous seedlings - \$35/M, deciduous seedlings - \$60/M, and coniferous transplants - \$85/M.

Other limitations in the State laws are: A minimum of 500 trees must be ordered per individual customer (with the exception of packets); the Soil and Water Conservation Districts are the only people that can repackage and resell the State stock; all subdivision of State government can obtain free trees; seedlings produced in the State nurseries cannot be for human food production, i.e. apples, pear, walnut; nor can they be used for landscaping or be removed with the roots attached.

Federal assistance, such as C-M 4 funds, go into a special account. However, all funds are appropriated by the State legislature. All costs are figured gross, any Federal funds for nursery purpose are not subtracted from the cost figures. In fact, the State must spend their money before Federal funds are issued as a reimbursement. C-M 4 funds can only be used to defray losses. Since Minnesota sells at cost, they are not eligible for C-M 4.

SEED SOURCES

Minnesota has had a policy that they will use only seed that originates within the State. Table 4 gives the location of seed source by species that has been used and the sources that have been recommended by the Experiment Center at Rhinelander, Wisconsin.

Present tree improvement work accomplished includes: 36 acres of red pine seed production areas; 40 selected red pine in natural stands; 11 acres of grafted red pine seed orchard; a grafted black spruce seed orchard; five acres of selected families of black spruce; superior stands of jack pine have been identified from which seed has been collected; hybrid poplar clones have been distributed to cooperators; preliminary selection work has been done on walnut and six acres of seed production areas have been established.

The State of Minnesota has recently contracted with the University of Minnesota's Dr. Carl Mohn to develop a tree improvement plan.

The State will be divided into geographically similar seed collecting zones. Species emphasis has been on red pine, white spruce, black spruce, jack pine, poplar, and walnut. It is stressed in the plan that all agencies will be solicited for assistance and cooperation to put the program into action.

THE ORDERING OF TREES

The client sends the completed order form to the St. Paul office for computer coding. The computer furnishes to the nursery a copy of the order and shipping tags and sends the customer an acknowledgement of his order. The inventory is kept by the central office that keeps the nurseries informed by telephone as to amounts left to sell. Contracting for the growing of seedlings for a specific client is not being done at the present time, but there are no known restrictions in the State regulations.

FOREST SERVICE NURSERIES

Waters meet, MI

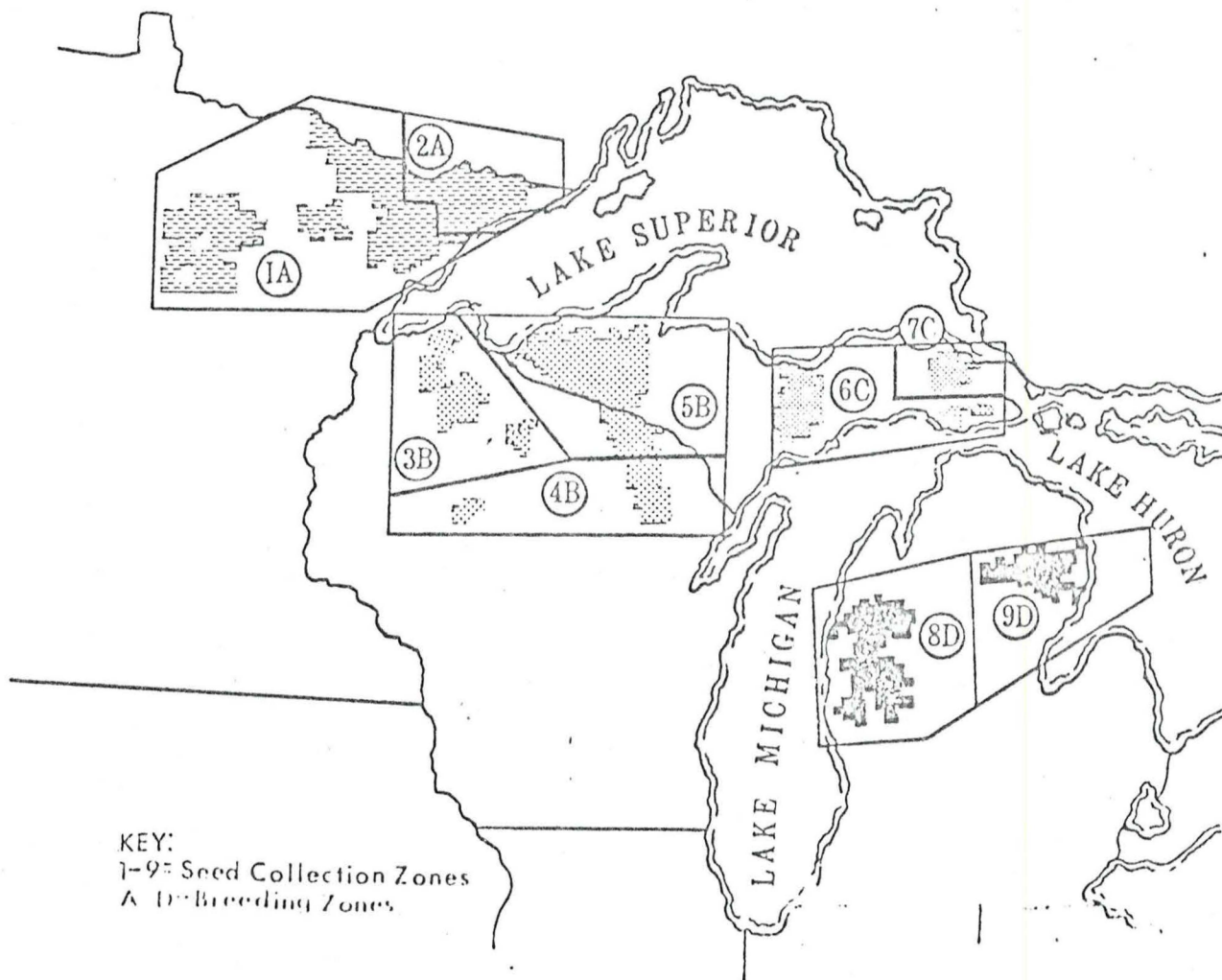
Miller's 1978 "An analysis of Forest Service Nurseries in the Lake States" provides a detailed description of Eveleth and Touney Nurseries (Miller 1978). This report should be used in conjunction with Miller's, in order to obtain a complete picture of the nursery situation in the Lake States. The Service-wide Nursery Capacity Study, 1978, provides updated information.

TREE IMPROVEMENT

Region 9 has established seed collection zones throughout the region. In the Lake States nine zones are used for seed collection. The seed that is collected by Forest Service crews is stored, sown, grown, and shipped separately. The seedlings that are planted within a zone are grown from seed that originated in that zone (Figure 6).

Individual superior trees have been selected and a seed orchard is being established in the Nicolet National Forest. Eastern white pine (for blister-rust-resistance and growth) white spruce, black spruce and yellow birch, plus red pine, jack pine, black cherry, paper birch, sugar maple and red oak are of special interest to the Forest Service in the Lake States. Individual seed orchards are established for each major seed zone. The seed produced for a given zone will be outplanted in that zone. The Forest Service nurseries have done a good job in distributing the seedlings back to the proper seed zone and as the superior seed becomes available from the orchards it will be incorporated into the nursery program.

FIGURE 6



Boundaries of seed collection zones and breeding zones
for the Lake States National Forests.

The main differences between the Forest Service tree improvement program and the States are: (1) The Forest Service seed zones are smaller and more specific than the States; (2) the Forest Service has had a more formalized program with a published plan, the states are in the process of formalizing their plans; (3) the States have been depending on the Forest Institute of Genetics at Rhinelander for seed source information while Forest Service has been doing their own selections, and (4) Forest Service had better control of the plantings of seedlings back into the proper seed zones. All nurseries use the Eastern Tree Seed Laboratory at Macon, Georgia, for the testing of seed and all seed is stored by seed source lots.

PRODUCTION COST DIFFERENCES

In general, the Forest Service nurseries are efficient and well-managed units. On the whole, the Forest Service nurseries are very well-equipped and they are funded at a higher level than the state nurseries. The state nurseries have had to improvise more often as evidenced by the amount of homemade equipment on hand.

Production cost differences between the State and Federal nurseries are caused by the systems under which they operate. The Forest Service pays a starting wage of \$5.50 for hourly workers (Table 5). Minnesota (the highest paying State) pays \$4.94/hour. If we assume a four week shipping season for five million trees and 80 temporary laborers the cost difference would be \$7,168 or \$1.43+ per thousand.

The Working Capital Fund is another area that can cause increased production costs. The rental costs seem to be much higher than those charged by state agencies. The states use a depreciation rate on equipment. After the depreciation period is up, the capital expenditure is completed, and operations and maintenance are the only cost involved until it is traded or otherwise taken off the inventory. Generally, the states use equipment for a much longer period of time. Because of the seasonal nature of nursery work, equipment will last longer compared to other forestry activities. Some of the state trucks, tractors, seeders, and sprayers seen during this visit were over 15 years old and still in relatively good condition. Some of the state nurseries are renting seasonally used equipment in order to save money.

Winter nursery crews at state nurseries are lower in numbers. Permanent personnel are often shifted to other state activity centers or the nursery shifts to another activity within the nursery complex, thus enabling a shift in some of the fixed cost items (such as utilities, and proportional maintenance) to another activity code.

States seem to be in a better position to use other sources of labor that is furnished at no cost to the nursery. CETA, YACC, YAC are Federal programs being utilized, as well as a number of similar programs.

The Forest Service nurseries generally seed for a lower seedbed density than the state nurseries. Since this practice utilizes 10 to 20 percent more seedbed, the Forest Service's cultural costs are higher. However, the states counting and grading costs are higher because of a greater cull percent of these high density seedlings.

Since grading costs make up a smaller percent of the total costs (not counting hourly wage differences) than the extra cultural costs and the net number of saleable seedlings is higher, the total costs of production is greater in the Forest Service operation. However, the lowered densities phased with good soils management will enable the rotation age to be reduced and likewise total costs.

The Toumey Nursery has started to produce 2-0 red pine for planting this spring. The next cost accounting should reveal a major reduction in production costs on this species. The state nurseries are adjusting their densities to meet local conditions also. A reduction of production costs will be delayed until they too shorten rotation ages.

TRANSPORTATION

The NFS distributes the seedlings by truck and tractor trailer. The transportation is the responsibility of the particular national forest that is tree planting. Miller's report uses \$1.75 per mile as accrual costs of transportation. This figure has been updated to \$2.00 to reflect the increased cost in the past two years.

Table 6 illustrates the cost of one-way trips between all of the nurseries and the National Forests Ranger Districts. This table is for illustration only and does not reflect the accrual cost of transportation because each year would be different. Some districts would not plant trees while others may have larger areas to plant.

The transportation costs are not reflected in the cost of seedling production; however, the transportation portion of reforestation costs could be reduced by utilizing the state nurseries to a greater degree. Presently the States of Wisconsin and Michigan provide free cold storage to Ranger Districts that insure the seedlings are in good condition for planting.

The recommendation of the Miller report was to consolidate the Forest Service Nursery Program at one nursery. If this is done without the utilization of the state nurseries, the transportation costs will increase significantly, especially in light of the recent increases in the cost of fuel that has been experienced. Unfortunately, for most of the Lake States nurseries, the distance between the refineries and the nurseries, plus the cold climate, causes the fuel to be even more expensive than many other areas of the country.

NURSERY LOCATION BY CONGRESSIONAL DISTRICT

Table 10 provides the names of the Federal Congressman from the District in which the nurseries are located. The Forest Service nurseries are located in counties that have relatively low unemployment. Only the Wilson Nursery area enjoys a lower unemployment rate than the counties in which the Federal nurseries are located.

Toumey Nursery and Wyman Nursery are within the same Legislative District. Schoolcraft County, where Wyman Nursery is located, has among the highest unemployment rates in Michigan at 24 percent. Gogebic County, the home of Toumey Nursery, has a rate of 8.1 percent. It would seem that if there were any political pressure it would be in favor of increasing employment in Schoolcraft County.

In Minnesota the situation is somewhat different. St. Louis County (Eveleth) has a lower unemployment rate than Hubbard County (Badoura) or Pine (General Andrews). The differences, however, are not that great; St. Louis, 6.2 percent; Hubbard, 11.7 percent; and Pine, 11.1 percent. These differences would not be much incentive for a political advantage by itself.

SUMMARY

The State nurseries within the Lake States have the capability and capacity to produce all of the tree seedlings required for all of the projected reforestation needs. The States production costs are generally less than the Forest Service nurseries. Differences in costs among nurseries is a reflection of management, as well as the systems under which they operate. For example, wages are determined by persons other than the nurseryman and are often above the local scale.

There has been a tightening up of the cost accounting procedures in the State nurseries in the past few years. The number of surplus seedlings have dwindled, in fact shortages are reported for most species in all states.

The demand for tree seedlings bottomed out about 1977 and has started a gradual increase. Predictions are for moderate increases in Wisconsin and Michigan, with a major increase in Minnesota. The Forest Service program will level off to a yearly demand of eight to nine million. By 1982, the Forest Service will be producing 15 percent of the total forest tree seedlings produced by government agencies in the Lake States.

Forest Service nurseries are funded at a higher level than the state nurseries and are better equipped. Seedling quality does not vary greatly among the nurseries, but labor costs are less in the state nurseries. Species vary somewhat, with the most variation occurring in the wildlife species. Red pine, white pine, jack pine, and white spruce are available in all the nurseries. Crop rotation is practiced in all nurseries.

Tree improvement programs are active and are presently being formalized. In general, all plans involve the same species. However, there has not been much coordination of efforts, with each agency working with only their own resources.

There exists ample opportunity to coordinate all agencies activities in the reforestation effort in the Lake States and to eliminate duplications.

This report in tandem with the Miller Report can be used to evaluate all alternatives for producing the forest tree seedlings for Region 9 within the Lake States. It is not within the role of State and Private Forestry to determine for Region 9 what course to take, but to present all known facts about the Lake State situation.

Using this report and the information contained in the Miller Report, the following is an expanded list of alternatives that can be considered.

1. Continue with the Status Quo (Miller Report).
2. Close the Toumey Nursery and use the Eveleth Nursery exclusively. (Miller Report).
3. Close Eveleth Nursery and use the Toumey Nursery exclusively (Miller Report).
4. Produce all stock at Toumey Nursery and maintain the seed extractory, seed storage, greenhouse, and stock cooler at Eveleth Nursery (Miller Report).
5. Close both nurseries and contract with the state nurseries to produce the stock needed (Miller's Report-additional information provided in this report).
6. Close both nurseries and rely on natural regeneration.
7. Maintain both nurseries and integrate reforestation program with states programs by which all nurseries would serve a local area surrounding the nursery.
8. Maintain both nurseries and integrate production schedules with state nurseries to produce fewer species but larger volume of a particular species.
9. Maintain both nurseries for the production of coniferous species only and contract with the states southern most nurseries to raise the hardwoods and shrubs.
10. Integrate facilities and equipment of state and federal nurseries to eliminate duplication of expensive specialized equipment, i.e. extractors and cold storage.
11. Close both nurseries and contract with private nurseries.

The alternatives have not been expanded to include the "pros" and "cons", neither have conclusions been drawn. Region 9, with the combined reports, can determine the most economical alternative that will fulfill the mission of the Forest Service and the guidelines set forth in Deputy Chief Leisz's November 1978 memorandum.

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APPENDIX

TABLE 1

YEARLY SEEDLING DISTRIBUTION BY STATE AND U.S. FOREST SERVICE NURSERY

| STATE OR FOREST SERVICE NURSERY | YEAR | | | | | | | | | | | | | | |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|-----------|------------|------------|------------|
| | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 * | 1980 ** | 1981 ** | 1982 ** |
| MICHIGAN | | | | | | | | | | | | | | | |
| Conifers | 8.5 | 6.1 | 6.5 | 6.5 | 7.5 | 6.0 | 6.1 | 3.5 | 4.3 | 6.6 | 5.5 | 5.1 | 6.0 | 7.0 | 8.0 |
| Hardwoods | 2.0 | 1.3 | 1.2 | 1.3 | .5 | .6 | .1 | .9 | 1.0 | .9 | 1.0 | 1.0 | 2.0 | 1.2 | 1.3 |
| Transplants | .3 | .5 | .7 | .6 | .9 | 1.0 | .8 | .5 | .3 | -- | -- | -- | -- | -- | -- |
| Sub Total | 10.8 | 7.9 | 8.4 | 8.4 | 8.5 | 7.6 | 7.0 | 4.9 | 5.6 | 7.5 | 6.5 | 6.1 | 8.0 | 8.2 | 9.3 |
| MINNESOTA | | | | | | | | | | | | | | | |
| Conifers | 14.4 | 13.9 | 12.9 | 12.7 | 11.9 | 10.2 | 10.7 | 9.4 | 9.3 | 7.1 | 10.9 | 7.4 | 10.0 | 20.0 | 25.0 |
| Hardwoods | 3.4 | .9 | 1.3 | 1.2 | 1.2 | 1.2 | .9 | 2.2 | 1.3 | 1.7 | 2.6 | 1.8 | 2.0 | 2.5 | 3.0 |
| Transplants | 2.2 | .8 | .4 | .5 | .6 | .9 | 1.2 | .9 | 1.1 | 1.0 | 1.7 | 1.1 | 2.0 | 2.0 | 2.0 |
| Sub Total | 20.0 | 15.6 | 14.6 | 14.4 | 13.7 | 12.3 | 12.8 | 13.1 | 11.7 | 9.8 | 15.2 | 10.3 | 14.0 | 22.5 | 30.0 |
| WISCONSIN | | | | | | | | | | | | | | | |
| Conifers | 12.3 | 11.0 | 11.6 | 11.7 | 12.6 | 10.5 | 12.7 | 11.0 | 12.3 | 11.3 | 11.6 | 12.0 | 13.0 | 14.0 | 15.0 |
| Hardwoods | .6 | .4 | 1.6 | .5 | .6 | .6 | 1.6 | 1.7 | 1.2 | 1.2 | 1.6 | 1.4 | 1.5 | 1.6 | 1.7 |
| Transplants | 5.6 | 5.7 | 5.6 | 5.3 | 4.9 | 1.9 | 4.3 | 3.3 | 3.0 | .9 | .7 | .6 | .5 | .4 | .3 |
| Sub Total | 18.5 | 17.1 | 18.8 | 17.5 | 18.1 | 13.0 | 18.6 | 16.0 | 16.5 | 13.4 | 13.9 | 14.0 | 15.0 | 16.0 | 17.0 |
| STATES TOTAL | 49.3 | 40.6 | 41.8 | 40.3 | 40.3 | 32.9 | 38.4 | 34.0 | 33.8 | 30.7 | 35.6 | 30.4 | 37.0 | 46.7 | 56.3 |
| FOREST SERVICE TOTAL | 20.3 | 17.5 | 15.1 | 13.6 | 11.5 | 9.8 | 7.0 | 7.6 | 6.8 | 5.9 | 7.4 | 6.3 | 8.6 | 8.5 | 8.6 |
| Chittenden - Transplants | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| - Seedlings | 5.0 | 4.6 | 3.8 | 2.2 | 2.3 | 1.3 | | | | | | | | | |
| Sub Total | 5.0 | 4.6 | 3.8 | 2.2 | 2.3 | 1.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Eveleth - Transplants | .7 | -- | -- | -- | -- | .2 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| - Seedlings | 6.1 | 6.1 | 5.3 | 6.5 | 5.1 | 4.0 | 2.9 | 3.2 | 2.4 | 2.5 | 3.4 | 1.9 | 4.0 | 4.3 | 4.0 |
| Sub Total | 6.8 | 6.1 | 5.3 | 6.5 | 5.1 | 4.2 | 2.9 | 3.2 | 2.4 | 2.5 | 3.4 | 1.9 | 4.0 | 4.3 | 4.0 |
| Toumey - Transplants | 2.4 | 1.7 | 1.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| - Seedlings | 6.1 | 5.1 | 4.5 | 4.9 | 4.1 | 4.3 | 4.1 | 4.4 | 4.4 | 3.4 | 4.0 | 4.4 | 4.6 | 4.2 | 4.6 |
| Sub Total | 8.5 | 6.8 | 6.0 | 4.9 | 4.1 | 4.3 | 4.1 | 4.4 | 4.4 | 3.4 | 4.0 | 4.4 | 4.6 | 4.2 | 4.6 |

*Estimated

**Projected

TABLE 2

EMPLOYEES AND LABOR COSTS FOR STATE NURSERIES (FY 78)

| <u>NURSERY</u> | <u>NURSERYMAN</u> | <u>ASSISTANT</u> | <u>FOREMAN</u> | <u>MECHANIC</u> | <u>SECRETARY OR CLERK</u> | <u>PERMANENT LABOR</u> | <u>SEASONAL OR TEMPORARY</u> | <u>LABOR</u> |
|-------------------|-------------------|------------------|----------------|-----------------|-----------------------------------|----------------------------|--------------------------------------|------------------------|
| Southern Michigan | \$21,000 | - | \$15,000 | - | \$7,000 | \$14,000 | - | 50/day |
| Number | 1 | - | 1 | - | 1 | 2 | - | 40-50 |
| Months employed | 12 | - | 12 | - | 6 | 12 | - | |
| Funded from | - | - | - | - | - | - | - | inmates |
| Other sources | | | | | | | | |
| Wyman | \$20,000 | - | \$7,750 | - | - | \$10,000 | - | \$3.75/hr. |
| Number | 1 | - | 1 | - | 1 | 2 | 3 | 25 |
| Months employed | 12 | - | 6 | - | 6 | 8 | as needed | 1 |
| Funded from | | | | - | CETA | | County | |
| Other sources | | | | | | | Welfare | |
| Badoura | \$18,911 | \$16,581 | \$13,219 | \$12,880 | \$12,880 | \$12,880 | \$12,880 | \$4.94/hr. |
| Number | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 80-100 |
| Months employed | 12 | 12 | 12 | 12 | 12 | 12 | 8 | 1½ |
| Funded from | - | - | - | - | - | - | - | MINNCEP |
| Other sources | | | | | | | | BICAP |
| G. Andrews | \$17,228 | \$13,459 | - | \$12,557 | \$12,557 | \$12,557 | - | \$4.96 - \$5.84/hr. |
| Number | 1 | 1 | - | 1 | 1 | 3 | - | 100 |
| Months employed | 12 | 12 | - | 12 | 12 | 12 | - | 1½ |
| Funded from | - | - | - | - | - | - | - | - |
| Other sources | | | | | | | | |
| Wilson | \$18,000 | - | \$12,000 | - | \$13,732 | \$13,732 | \$ 8,010 | \$2.90 - \$3.25/hr. |
| Number | 1 | - | 1 | - | 1 | 1 | 8 | 70-75 |
| Months employed | 12 | - | 12 | - | 12 | 12 | 7 | 2 |
| Funded from | - | - | - | - | - | - | - | - |
| Other sources | | | | | | | | |

TABLE 2 (Con't)

| <u>NURSERY</u> | <u>NURSEYMAN</u> | <u>ASSISTANT</u> | <u>FOREMAN</u> | <u>MECHANIC</u> | <u>SECRETARY OR CLERK</u> | <u>PERMANENT LABOR</u> | <u>SEASONAL OR TEMPORARY</u> | <u>LABOR</u> |
|-----------------|------------------|------------------|----------------|-----------------|-----------------------------------|----------------------------|--------------------------------------|--------------------|
| Griffith | \$20,634 | - | \$15,392 | - | | | \$5.52-\$6.80 | \$2.90 - \$3.50 |
| Number | 1 | - | 1 | - | | | 7 | |
| Months employed | | - | | - | | | 12 | |
| Funded from | | - | | - | | | YACC used | |
| Other sources | | | | | | | for inventory | |
| Hayward | \$19,600 | - | \$14,700 | | \$12,367 | \$13,367 | \$ 5,750 | \$2.90 - \$3.25 |
| Number | 1 | - | 1 | | 1 | 2 | 4 | 60 |
| Months employed | 12 | - | 12 | | 12 | 12 | 7 | 1½ |
| Funded from | - | - | | | | | - | |
| Other sources | | | | | | | | |
| 123-1 Toumey | \$21,831 | | | | | | | \$5.50 |
| Number | 1 | 1 | 1 | | 1 | 6 | 7 | 80 |
| Months employed | 12 | 12 | 12 | | 12 | 12 | 6 | 1½ |
| Funded from | | | | | | | | |
| Other sources | | | | | | | | |
| Eveleth | \$21,831 | | | | | | | \$5.50 |
| Number | 1 | - | - | | 1 | 4 | 3 | 60 |
| Months employed | 12 | | | | 6 | 12 | 6 | 1½ |
| Funded from | | | | | | | | |
| Other Sources | | | | | | | | |

TABLE 3

NURSERY STATISTICS

| ACREAGE & PRODUCTION POTENTIAL | GENERAL ANDREWS | BADOURA | WILSON | GRIFFITH | HAYWARD | WYMAN | SOUTH. MICHIGAN | EVELETH | TOUMEY |
|--|-------------------|---------------------|-----------------------|-----------------------------|----------------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Gross Acreage | 266 | 320 | 100 | 100 | 116 | 100 | 80 | 145 | 100 |
| Seed Bed Area | 157 | 120 | 72 | 80 | 51 | 47 | 63 | 54 | 66 |
| Annual Production Possible (3-0) without Capital Expenditures | 20MM | 20MM | 10MM | 7MM | 10MM | 6MM | 10MM | 13MM | 15MM |
| Annual Production with Expansion of Nursery Area | -- | 10 | 10MM | -- | 2MM | 6 | -- | 3MM | 5 |
| PHYSICAL PLANT | | | | | | | | | |
| Cold Storage (No. of trees) Age (2MM-3 | | (2MM)-10 | (1MM) 20 | (2MM) 30, New | (1.5)(1MM) 15. 30 | (1.5MM) 10 | 3MM(22) | (3.7MM) 16 | (3.7MM) 15 |
| Cold Storage- Seed, age | 30 | 10 | No | 30 | 10 | No | 22 | 13 | 13 |
| Cone Storage, age | No | 10 | No | No | Limited | No | No | 15 | -- |
| Seed Extractory, age | No | 20 | Hardwoods | No | 10 | No | No | 16 | -- |
| Packing Building, age | 40+ | 30 | 26 | 45 | 40+ | 46 | 22 | 15 | 15 |
| Office Building, age | 10 | 20 | 10 | 10 | 40+ | 46 | 22 | 24 | In Packing Bldg. |
| Warehouse, age | 20 | 20 | 26 | 45 | 40+ | 46 | 22 | 28 (3) | 30+ (2) |
| Equipment Storage, age | 2 | 30 | 26 | 40 | 40+ | 9 | 15 | 11 | 4 8 (2) |
| Chemical Store Room, age | 40 | 20 | Yes | Yes | 40+ | 46 | 22 | 7 | 9 |
| Pump House, age | None | Yes 30 | Yes | Yes | Yes | 46 | 22 | 27 | 14 |
| Oil Shed, age | No | No | No | No | Yes | 46 | No | 30 | 30+ |
| Irrigation Water Source | 3 Wells | 4 Wells | River Backwater | Nepco Lake | Wells River | River | Wells | Lake | River |
| Age of Pump | 22 (Rebuilt) | 17 | 26 | ? | ? | ? | 22 | 17 | 16 |
| Residence No. (Age) | No | 2 (30) | No | Yes (40) | No | Yes (46+) | No | 16 | 12 30+ |
| Greenhouse, Age | 5 | 10 | No | 30 | None | None | None | 14 | 15 |
| Type Irrigation | Skinner C | Skinner C | Skinner Ossillator | Skinner Ossillator | Skinner Ossillator | Skinner Ossillator | Skinner Ossillator | Skinner Ossillator | Skinner Ossillator |
| Age of Irrigation Lab | 40+ Soils-(10) | 42,25,22,17 None | 26 (Rebuilt) None | 45 (Rebuilt) Pathologist | 40+ Crude Germinator | 46 None | 22 None | 40 None | 40 Seed |

TABLE 3 (CONTINUED)

NURSERY STATISTICS

| | GENERAL ANDREWS | BADOURA | WILSON | GRIFFITH | HAYWARD | WYMAN | SOUTH. MICHIGAN | EVELETH | TOUMEY |
|------------------------------|-----------------|-----------|------------|------------|------------|-----------|-----------------|------------|------------|
| CLIMATIC DATA * | | | | | | | | | |
| Growing Season | | | | | | | | | |
| Avg. Growing Season | 123 | 126 | 155 | 136 | 112 | 146 | 151 | 111 | 125 |
| No. Frost Free Days | 123 | 126 | 154 | 136 | 112 | 121 | 151 | 111 | 125 |
| Date First Killing Frost | 9/22 | 9/22 | 10/1 | 9/27 | 9/15 | 9/22 | 10/7 | 9/16 | 9/24 |
| Date of Last Killing Frost | 5/22 | 5/19 | 4/29 | 5/14 | 5/26 | 5/24 | 5/9 | 5/28 | 5/22 |
| Mean Jan. Temp. (F) | 8.8° | 4.4° | 16.6° | 12.9° | 9.3° | 16.3° | 21.8° | 6.8° | 12.2° |
| Mean July Temp. (F) | 68.6° | 68.6° | 72.1° | 70.1° | 67.5° | 66.1° | 71.4° | 66.8° | 67.2° |
| Mean Annual Precip. (Inches) | 26.3 | 24.7 | 32.3 | 31.9 | 28.9 | 27.6 | 28.6 | 26.0 | 32.2 |
| Record High Temp. (F) | 104° | 107° | 108° | 107° | 102° | 100° | 106° | 103° | 104° |
| Record Low Temp. (F) | -41° | -51° | -30° | -43° | -50° | -32° | -24° | -45° | -37° |
| Age of Nursery (Yrs) | 41 | 48 | 26 | 45 | 40+ | 46 | 22 | 30+ | 30+ |
| SOILS | | | | | | | | | |
| Soil Type | Sand | Sand | Loamy Sand | Sand | Sandy Loam | Sand | Sandy Loam | Sandy Loam | Sandy Loam |
| Drainage | Excellent | Excellent | Good | Excellent | Good | Good | Good | Good | Excellent |
| LABOR POOL | | | | | | | | | |
| Availability | Excellent | Excellent | Adequate | Inadequate | Adequate | Excellent | **Adequate | Adequate | Adequate |
| Unemployment Rate 1/79 | 11.1% | 11.7% | 5.0% | 7.7% | 12.7% | 24.0% | 6.3% | 6.2% | 8.1% |
| Minimum Wage Paid/Hr. | \$4.96 | \$4.94 | \$3.00 | \$3.00 | \$3.00 | \$3.85 | -- | \$5.50 | \$5.50 |

* 1941 Yearbook of Agriculture, Climate and Man, USDA, 1248pp.

**If inmate labor is eliminated, labor is inadequate.

TABLE 4

| STATE | SPECIES PRODUCED | SEED SOURCE USED | RECOMMENDED SEED SOURCE* (Nienstaedt, 1973) |
|-----------|----------------------|---------------------------------|--|
| MICHIGAN | | Seed orchards being established | |
| | Jack pine | Upper Part of L.P. | Seedling seed orchard es |
| | Red pine | " " " " | Local source |
| | White pine U.P. | " " " " | Upper Park of L.P. |
| | White pine L.P. | North Carolina | Tennessee |
| | White spruce | " " | Southeastern Ontario |
| | Norway spruce | Herbst | EAST CENTRAL EUROPE |
| | Black locust | | None |
| | Black walnut | Southern Michigan | 150 miles south of |
| | | Northern Indiana | planting site |
| | Tulip poplar | Southern Michigan | Local |
| | White oak | " " | Local |
| | Red oak | " " | Local |
| | Black cherry | " " | Local |
| | Hard maple | " " | Local |
| | White ash | " " | Local |
| | Cottonwood | | Local |
| | Autumn-olive | Seed production area | Acclimated individual |
| | Washington hawthorn | " " " | " " |
| | Siberian crab | " " " | " " |
| | Grey Dogwood | " " " | Local sources |
| | Buffalo berry | " " " | Acclimated individuals |
| | Wild grape | " " " | " " |
| | Honeysuckle | " " " | " " |
| | Multiflora rose | " " " | " " |
| MINNESOTA | Jack pine | Local | St. Croix State Park |
| | Norway pine | Local | Developing seed orchard |
| | White pine | Local | Local |
| | White spruce | Grafted orchard est. | Local mixed with |
| | | | S. Ontario |
| | Black spruce | Seed orchard | Local |
| | Colorado spruce | | |
| | Black Hills spruce | South Dakota | |
| | Norway spruce | | Eastern Poland, White |
| | | | Russia, East-Central |
| | | | Europe |
| | Northern white-cedar | Local | Local |
| | Balsam fir | Local | Late Flushing, Local |
| | | | stands |

* Some recommendations modified to reflect recent developments.

TABLE 4 (Con't)

| STATE | SPECIES PRODUCED | SEED SOURCE USED | RECOMMENDED SEED SOURCE |
|-----------|----------------------|---------------------------------------|--|
| MINNESOTA | Green ash | Southern Michigan | South of planting site |
| | Soft maple | " " | Local |
| | Black walnut | " " | 150 miles south |
| | Poplar | Southern Michigan (Gordon Gullun) | Selected NE clone High protein male Aspen clones |
| | Yellow birch | Northern Minnesota | Local |
| | Butternut | Southern Minnesota | Local |
| | Honeysuckle | Local acclimated individuals | None |
| | Caragana | Local acclimated individuals | None |
| | Wild plum | Local acclimated individuals | None |
| | Russian-olive | Local acclimated individuals | None |
| | Ginnila maple | Local acclimated individuals | None |
| | Buffaloberry | Local acclimated individuals | None |
| | Lilac | Local | None |
| | Hackberry | Local | None |
| | Mt. ash | Local | None |
| WISCONSIN | Red pine | N. Wisconsin seedling seed orchard | Local |
| | White pine | N. Wisconsin | From area 100 miles south |
| | Norway spruce | N. Wisconsin | Eastern Poland, White Russian, East-Central Europe |
| | White spruce | Local | Southeastern Ontario |
| | E. larch | | |
| | Jack pine | N. Wisconsin | Lower Michigan mixed with local seed |
| | Northern white-cedar | Local | Local |
| | White ash | N. Wisconsin | |
| | Black walnut | So. Wisconsin | 150 miles south of planting site |
| | Red oak | So. Wisconsin | None |
| | White oak | So. Wisconsin | None |

TABLE 4 (Con't)

| STATE | SPECIES PRODUCED | SEED SOURCE USED | RECOMMENDED SEED SOURCE |
|-----------|---------------------|------------------------|-------------------------|
| WISCONSIN | Sugar maple | N. Wisconsin | |
| | Basswood | So. Wisconsin | |
| | Multiflora rose | Seed production area | None |
| | | Acclimated individuals | |
| | Autumn-olive | Seed production area | None |
| | | Acclimated individuals | |
| | Mixed crabapple | Seed production area | None |
| | | Acclimated individuals | |
| | Ninebark | Seed production area | None |
| | | Acclimated individuals | |
| | Nannyberry | Seed production area | None |
| | | Acclimated individuals | |
| | Silky dogwood | Seed production area | None |
| | | Acclimated individuals | |
| | Grey dogwood | Seed production area | None |
| | | Acclimated individuals | |
| | Wild grape | Seed production area | None |
| | | Acclimated individuals | |
| | Wild plum | Seed production area | None |
| | | Acclimated individuals | |
| | Red Osier dogwood | Seed production area | None |
| | | Acclimated individuals | |
| | Hazelnut | Seed production area | None |
| | | Acclimated individuals | |
| | High bush cranberry | Seed production area | None |
| | | Acclimated individuals | |
| | Hawthorn | Seed production area | None |
| | | Acclimated individuals | |
| | Sumac | Seed production area | None |
| | | Acclimated individuals | |

TABLE 5

PRODUCTION COSTS IN NURSERY FOR FY 1978 (\$)/M

| <u>NURSERY</u> | <u>DIRECT COSTS</u> | <u>INDIRECT COSTS</u> | <u>TOTAL</u> | <u>% CHARGED TO ADMIN.</u> | <u>MM SEEDLINGS PRODUCED</u> |
|-------------------|-------------------------|---------------------------|--------------------|--------------------------------|----------------------------------|
| Southern Michigan | 20.51 | 14.49 | 35.00 | 70% | 3.5 |
| Wyman | 21.34 | 15.06 | 36.40 | 70% | 3 |
| General Andrews | 34.73 | 4.17 | 38.90 | 12% | 6 |
| Badoura | 34.73 | 4.17 | 38.90 | 12% | 4.5 |
| Eveleth | 25.62 | 25.24 ⁴ | 50.86 ² | 46% ³ | 2.5 |
| Toumey | 30.28 | 26.33 ⁴ | 56.61 ² | 49% ³ | 4.5 |
| Wilson | 43.61 | 14.39 ¹ | 58.00 | 30% | 3 |
| Hayward | 43.61 | 14.39 ¹ | 58.00 | 30% | 5 |
| Griffith | 43.61 | 14.39 ¹ | 58.00 | 30% | 6 |

¹Includes certain costs that are not nursery operations

²Does not include regional office overhead

³1977 percent figure

⁴Does not include regional costs

TABLE 6

Mileage Between NFS Districts, State Nurseries and
Federal Nurseries and Costs¹ of One-Way Trip

| NATIONAL FOREST DISTRICTS | EVELETH | GENERAL ANDREWS | BADOURA | HAYWARD | TOUMEY | WYMAN | S.MICH. | COST SAVING IF STATE NUR. IS USED |
|------------------------------|------------------------|--------------------|-----------|---------|-----------|-----------|-----------|--------------------------------------|
| <u>CHIPPEWA</u> | | | | | | | | |
| BLACK DUCK | 128 (265) ² | 178 (356) | 89 (178) | | | | | 78 |
| CASS LAKE | 120 (240) | 162 (324) | 44 (88) | | | | | 152 |
| DEER RIVER | 80 (160) | 122 (244) | 84 (168) | | | | | - 8 |
| MARCELL | 92 (184) | 134 (268) | 80 (160) | | | | | 24 |
| WALKER | 141 (282) | 140 (280) | 20 (40) | | | | | 242 |
| <u>SUPERIOR</u> | | | | | | | | |
| AURORA | 16 (32) | 102 (204) | 182 (364) | | | | | -188 |
| GRAND MARAIS | 176 (352) | 164 (328) | 260 (520) | | | | | 24 |
| ISABELLA | 116 (232) | 136 (272) | 246 (492) | | | | | -40 |
| ELY | 68 (136) | 154 (308) | 234 (468) | | | | | -172 |
| COOK | 25 (50) | 111 (222) | 191 (382) | | | | | -172 |
| TOEFTE | 148 (296) | 136 (272) | 232 (464) | | | | | -24 |
| TWO HARBORS | 76 (152) | 80 (160) | 176 (352) | | | | | - 8 |
| VIRGINIA | 3 (6) | 89 (178) | 169 (338) | | | | | -172 |
| <u>HIAWATHA</u> | | | | | | | | |
| MANISTIQUE | | | | | 180 (360) | 1 (2) | | 358 |
| MUNISING | | | | | 156 (312) | 43 (86) | | 226 |
| RAPID RIVER | | | | | 142 (284) | 39 (78) | | 206 |
| ST. IGNACE | | | | | 196 (392) | 88 (196) | | 196 |
| SAULT ST. MARIE | | | | | 225 (450) | 117 (234) | | 216 |
| <u>HURON-MANISTEE</u> | | | | | | | | |
| BALDWIN | | | | | 364 (728) | 265 (512) | 171 (342) | 386 |
| CADILLAC | | | | | 326 (652) | 218 (436) | 158 (316) | 336 |
| HARRISVILLE | | | | | 365 (730) | 257 (514) | 201 (402) | 328 |
| MANISTEE | | | | | 366 (732) | 258 (516) | 207 (414) | 318 |
| MIO | | | | | 318 (636) | 210 (420) | 204 (408) | 228 |
| TAWAS | | | | | 351 (702) | 243 (486) | 168 (336) | 366 |
| WHITE CLOUD | | | | | 390 (780) | 282 (564) | 139 (278) | 502 |

1 Costs figured at \$2 per mile.

2 (Cost for one way trip)

TABLE 6 (Con't)

| NATIONAL FOREST DISTRICTS | EVELETH | GENERAL ANDREWS | BADOURA | HAYWARD | TOUMEY | WYMAN | S.MICH. | COST SAVING IF STATE NUR. IS USED |
|------------------------------|---------|--------------------|---------|-----------|-----------|-----------|---------|--------------------------------------|
| OTTAWA | | | | | | | | |
| BERGLAND | | | | | 39 (78) | 147 (399) | | -316 |
| BESSEMER | | | | | 53 (106) | 161 (332) | | -226 |
| IRON MOUNTAIN | | | | | 29 (58) | 79 (158) | | -100 |
| KENTON | | | | | 35 (70) | 117 (234) | | -164 |
| ONTONAGON | | | | | 35 (70) | 143 (286) | | -216 |
| WATERSMEET | | | | | 1 (2) | 108 (216) | | -214 |
| CHEQUAMEGON | | | | | | | | |
| PARK FALLS | | | | 60 (120) | 100 (200) | | | 80 |
| GLIDDEN | | | | 50 (100) | 94 (188) | | | 88 |
| MEDFORD | | | | 129 (258) | 128 (256) | | | -2 |
| HAYWARD | | | | 1 (2) | 138 (276) | | | 274 |
| WASHBURN | | | | 65 (130) | 98 (196) | | | 66 |
| NICOLET | | | | | | | | |
| EAGLE RIVER | | | | 137 (274) | 27 (54) | 174 (348) | | -220 |
| FLORENCE | | | | 192 (384) | 60 (120) | 121 (242) | | -122 |
| LAKEWOOD | | | | 198 (396) | 83 (166) | 180 (360) | | -194 |
| LEONA | | | | 176 (352) | 61 (122) | 162 (324) | | -202 |

\$1,934

TABLE 7

HISTORY OF SEEDLING SELLING PRICE (\$/M)

| STATE | YEAR | | | | | | | | | | | |
|--------------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|---------------------------|
| | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 |
| MICHIGAN | | | | | | | | | | | | |
| 1-0 (HWD) | 15 | 16 | 16 | 16 | 16 | 16 | 16 | 19 | 24/50 | 24/50 | 24/50 | 24-Shrub 50 100-Wal |
| 2-0 (JACK PINE) | 8 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 25 | 25 | 20 | 20 |
| 3-0 | 12 | 20 | 20 | 20 | 20 | 20 | 20 | 25 | 30 | 30 | 30 | 35 |
| 2-2 | 24 | 36 | 36 | 36 | -- | -- | -- | -- | -- | -- | -- | -- |
| MINNESOTA | | | | | | | | | | | | |
| 1-0 (HWD) | 12 | 15 | 15 | 15 | 15 | 15 | 20 | 20 | 50 | 50 | 50 | 60 |
| 2-0 (JACK PINE) | 12 | 15 | 15 | 15 | 15 | 15 | 20 | 20 | 30 | 30 | 30 | 35 |
| 3-0 | 12 | 15 | 15 | 15 | 15 | 15 | 20 | 20 | 30 | 30 | 30 | 35 |
| 2-2 | 30 | 30 | 30 | 30 | 30 | 30 | 40 | 40 | 60 | 60 | 80 | 85 |
| WISCONSIN | | | | | | | | | | | | |
| 1-0 (HWD) | 25 | 25 | 25 | 13/25 | 13/30 | 13/30 | 12/30 | 13/30 | 19/50 | 25/50 | 28/75 | 78/126 |
| 2-0 (JACK PINE) | 15 | 15 | 16 | 19 | 19 | 21 | 21 | 22 | 22 | 26 | 30 | 38 |
| 3-0 | 18 | 18 | 19 | 22 | 22 | 24 | 23 | 25 | 25 | 30 | 34 | 58 |
| 2-2 | 35 | 35 | 37 | 37 | 37 | 41 | 42 | 50 | 58 | 64 | 78 | 104 |
| FOREST SERVICE | | | | | | | | | | | | |
| 1-0 | -- | -- | -- | 24 | 24 | 24 | -- | 33 | 37 | 46 | 49 | 53 |
| 2-0 | 16 | 17 | 24 | 28 | 28 | 28 | 34 | 36 | 40 | 50 | 53 | 57 |
| 3-0 | 18 | 20 | 28 | 32 | 32 | 32 | 36 | 38 | 42 | 52 | 55 | 59 |
| 2-2 (4-0) | 30 | -- | 42 | 49 | 49 | 49 | -- | -- | 61 | 76 | -- | (62) |

TABLE 8

PACKAGING METHOD

| NURSERY | PINE SEEDLINGS | HARDWOOD SEEDLINGS | TRANSPLANTS |
|-----------------|--|--------------------|-------------|
| EVELETH | | | |
| GENERAL ANDREWS | Round bale with Allis Chalmers baler-----> | | |
| BADOURA | Round bale with Allis Chalmers baler-----> | | |
| WILSON | 3-layered kraft polylined bag sewn on the top | | |
| GRIFFITH | 3-layered kraft polylined bags sewn on the top-----> | | |
| HAYWARD | Jelly roll with kraft paper moss bags | | |
| TOUMEY | Bags and no packing material, sown on the top | | |
| WYMAN | 3-layered kraft bags, stapled on the top -----> | | |
| SO. MICHIGAN | 3-layered kraft polylined bags, stapled on the top ----> | | |

TABLE 9

PRIVATE NURSERIES IN THE LAKE STATES

| <u>MICHIGAN</u> | <u>Annual (MM) Production</u> | <u>Price/M 3-0</u> | <u>Major use of stock</u> | <u>Comment</u> |
|--|-----------------------------------|------------------------|---|----------------|
| 1. Newaygo Nursery 940 W. Rex St. Fremont, MI 49412 616-924-2060 | 3.5 | \$47 | Reforestation | SWCD |
| 2. Van Buren Nursery Center Building Pawpaw, MI 49079 616-657-0403 | 3.0 | \$50 | Reforestation | SWCD |
| 3. Armintrouts Evergreen Nursery Allegan, MI 59010 616-673-2704 | 8.0 | \$110 | Reforestation & Christmas trees | |
| 4. Michigreen Nursery 520 Orchard Ave. Grand Haven, MI 49417 616-842-2674 | 2.0 | \$100 | Christmas trees | |
| 5. Needlefast Evergreens Rt. #2 Ludington, MI 49431 616-843-8524 | 6.0 | \$80 | Christmas trees | |
| 6. Van Pines Rt. #1 West Olive, MI 616-392-1446 | 10.0 | \$100 | Reforestation & Christmas tree Ornamental | |
| 7. Land of Pines 1056 N. Schoenherr Rd. Custer, MI 616-757-2141 | 2.0 | \$60 | Reforestation & Christmas tree Ornamental | |

MINNESOTA

NONE

TABLE 9 (continued)

| <u>WISCONSIN</u> | <u>Annual (MM)</u> <u>Production</u> | <u>Price/M</u> <u>3-0</u> | <u>Major use</u> <u>of stock</u> | <u>Comment</u> |
|--|---|------------------------------|-------------------------------------|----------------|
| 1. Forest Acres, Inc. Box 511 Princeton, WI 54968 414-295-6208 | NOT YET IN PRODUCTION | | | |
| 2. Jens Nurseries 3011 Saratoga St. Wisconsin Rapids 715-423-4410 | | | | |
| 3. Nepco Lake Nursery Division of Nekoosa-Edwards Port Edwards, WI 54469 715-887-5301 | 2.5 | ? | Reforestation | |
| 4. Pony Creek Tilleda, WI 54978 715-787-3889 | 1.0 | | | |

TABLE 10

U.S. Legislative Districts and Senators by Nursery

| <u>Nursery</u> | <u>Congress</u> | <u>Senator</u> | <u>Senator</u> |
|------------------------------------|--|--|----------------------------------|
| Howell, Mich 6th District | Bob Carr (D) East Lansing | Donald W. Riegel, Jr. Flint (D) | Carl Levin Detroit (D) |
| Manistique, Mich 11th District | Robert Davis (R) Gaylord, Mich | " | " |
| Watersmeet, Mich. 11th District | " | " | " |
| Hayward Wisc. 7th District | David R. Obey (D) Wausau, Wisc. | William Proxmire (D) Madison, Wisc. | Gaylord Nelson Madison, Wisc. |
| Wisconsin Rapids 7th District | " | " | " |
| Boscobel, Wisc. 3rd District | Alvin Baldus (D) Menomonie, Wisc. | " | " |
| Carlos Civey, Minn. Forest Lake | James L. Oberstar (D) Chisholm, Minn. | David F. Durenberger Minneapolis | Rudolph Bosch Plymouth |
| Badoura, Minn. 7th District | Arlan Stangeland (R) Barnesville, MN | " | " |
| General Andrews Willow River | James L. Oberstar (D) Chisholm, Minn. | " | " |
| Eveleth, Minn. 8th District | " | " | " |

FIGURE 7

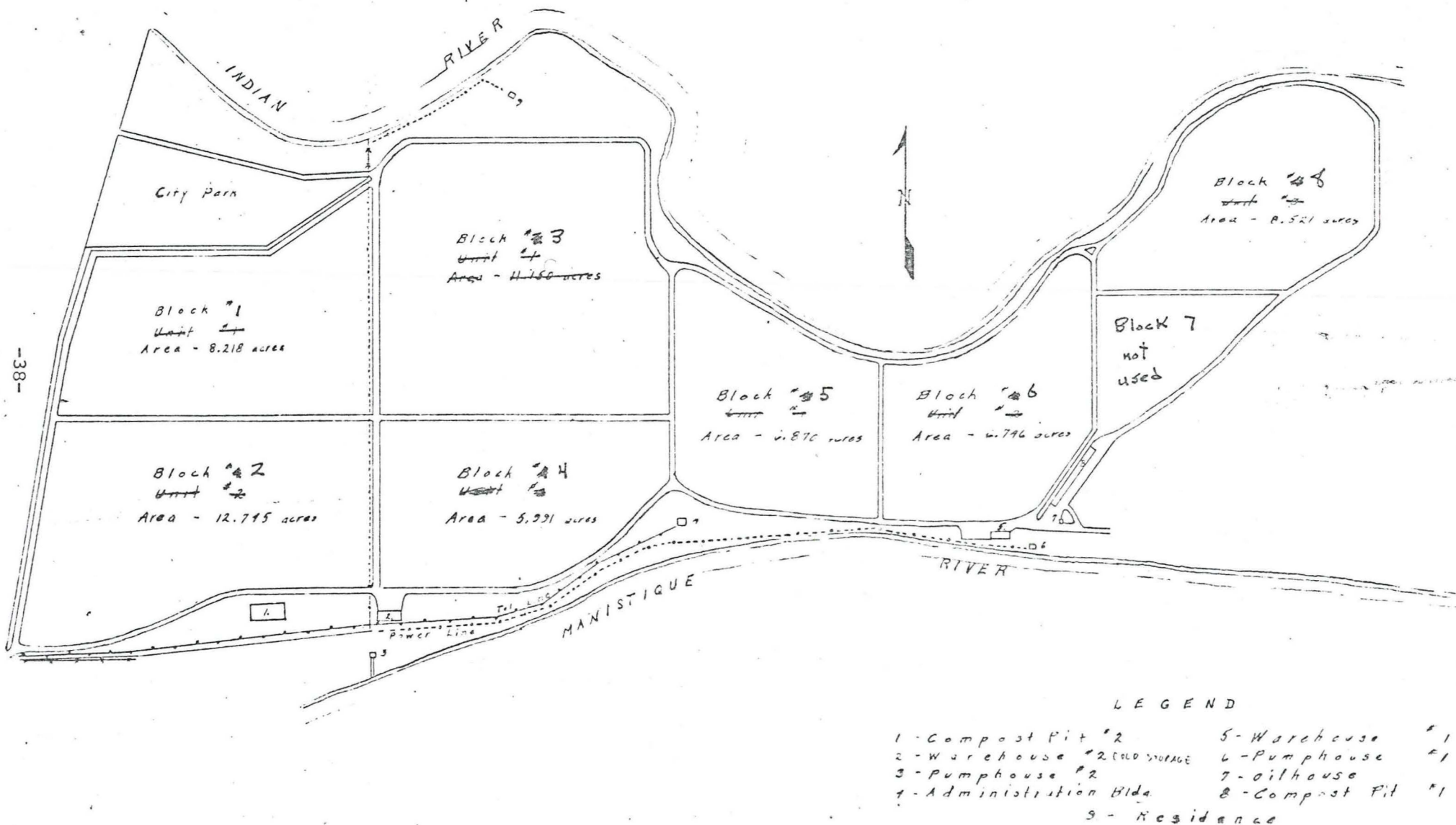
SOUTHERN MICHIGAN STATE FOREST NURSERY
4631 BISHOP LAKE ROAD
HOWELL, MICHIGAN



U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE REGION 9

Thomas B. WYMAN NURSERY LAYOUT

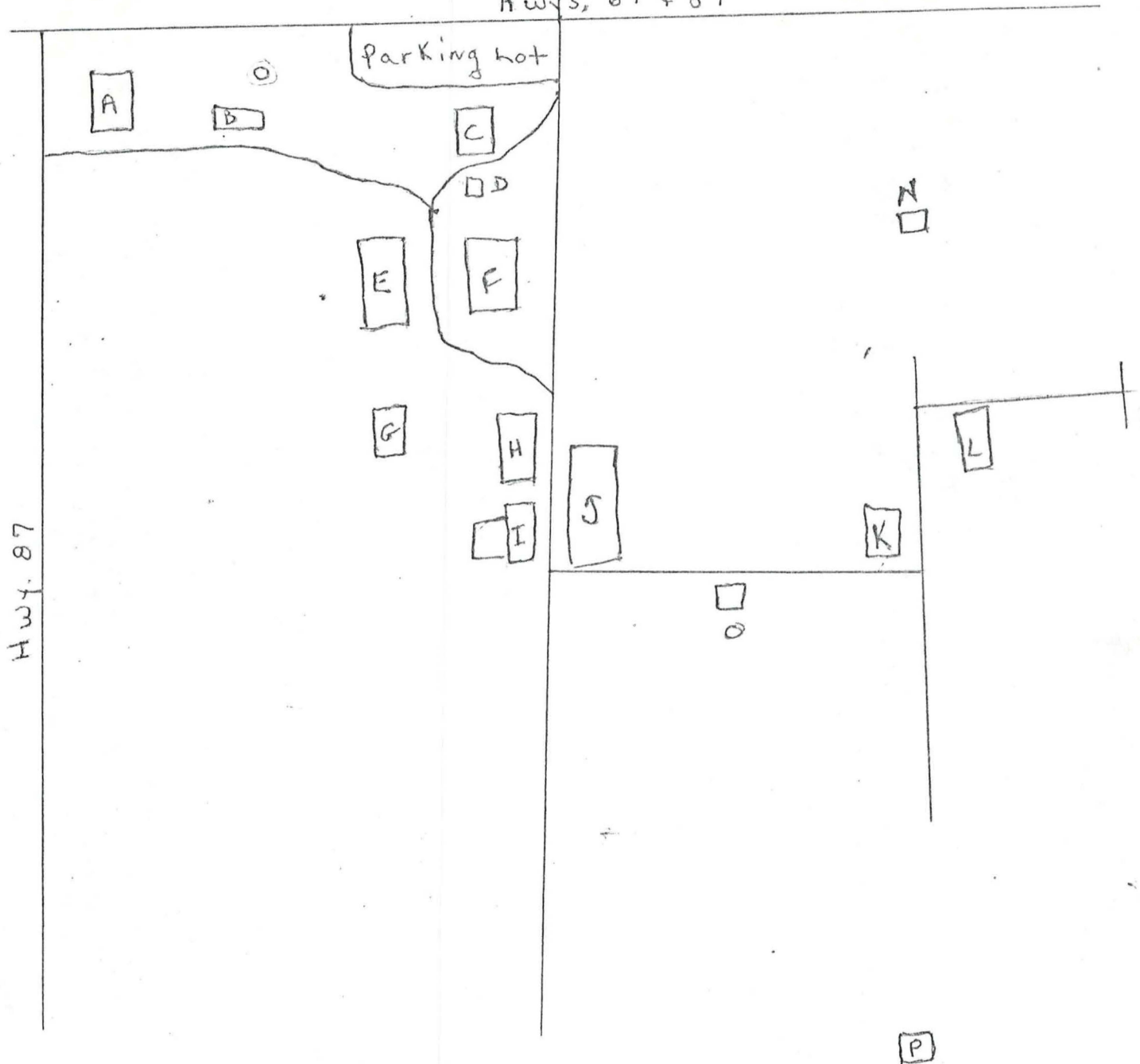
FIGURE 8



BADOURA NURSERY LAYOUT

FIGURE 9

Hwys. 64 + 87



- A - Residence
- B - Garage
- C - Carpenter shop
- D - Oil Shed
- E - shop + Extractory
- F - Office
- G - Storage Garage
- H - mechanical Baling Shed
- I - Hand Baling Shed + Root cellar

- J - Cone Shed
- K - Fertilizer Shed
- L - Storage Shed
- M - Storage Shed + Pump house
- N - Pump house
- O - Pump house
- P - Pump house
- Sawmill

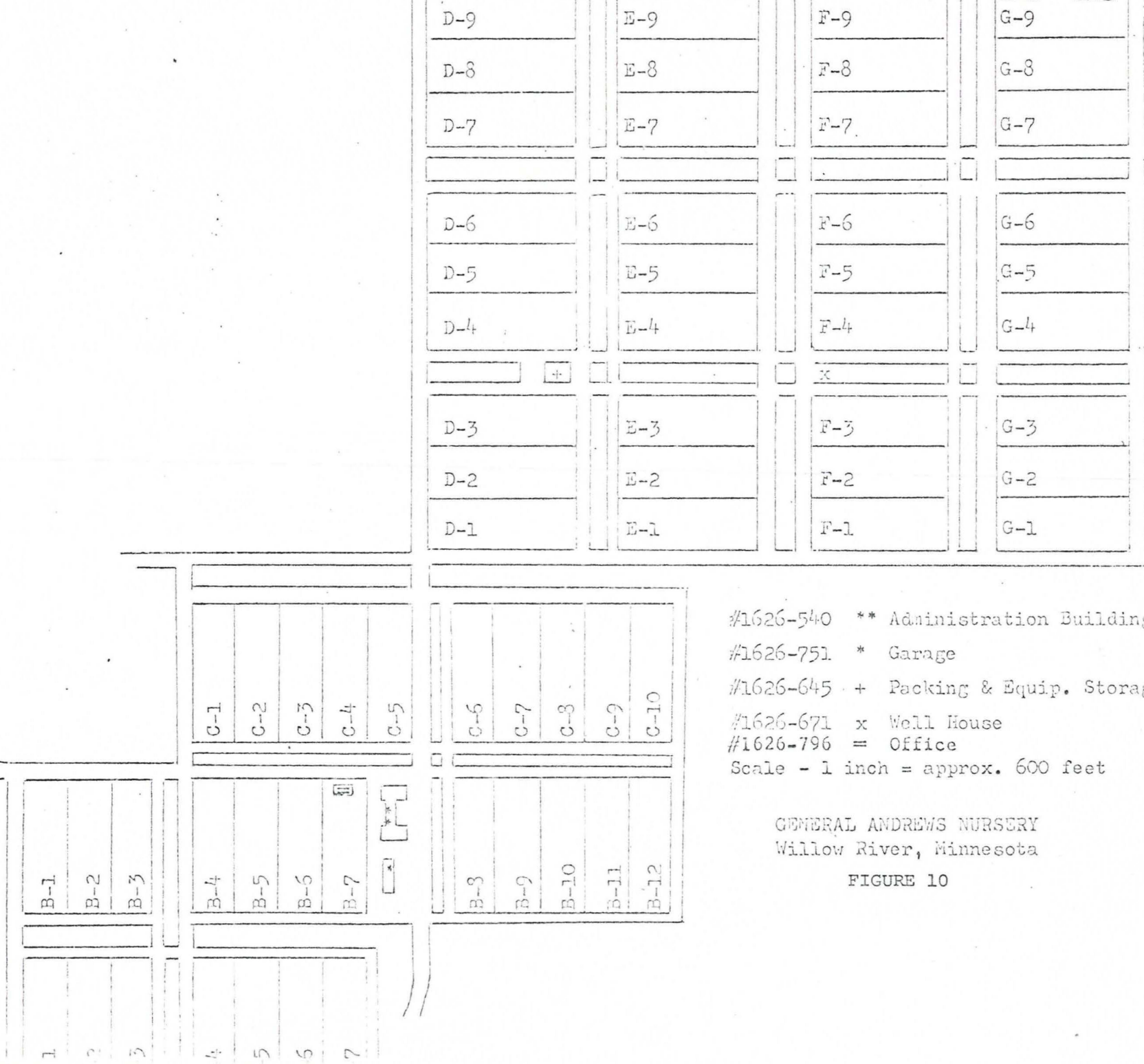
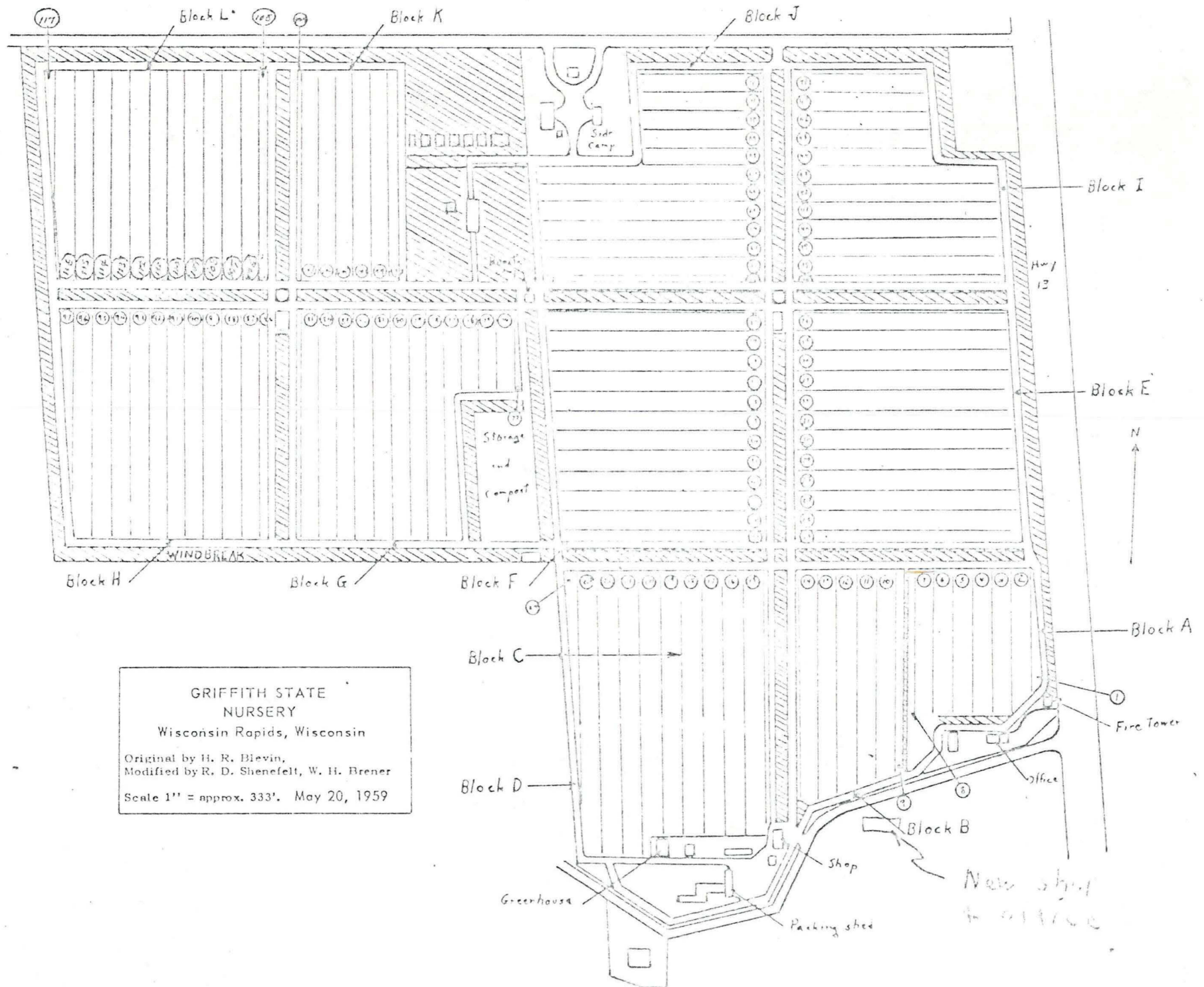
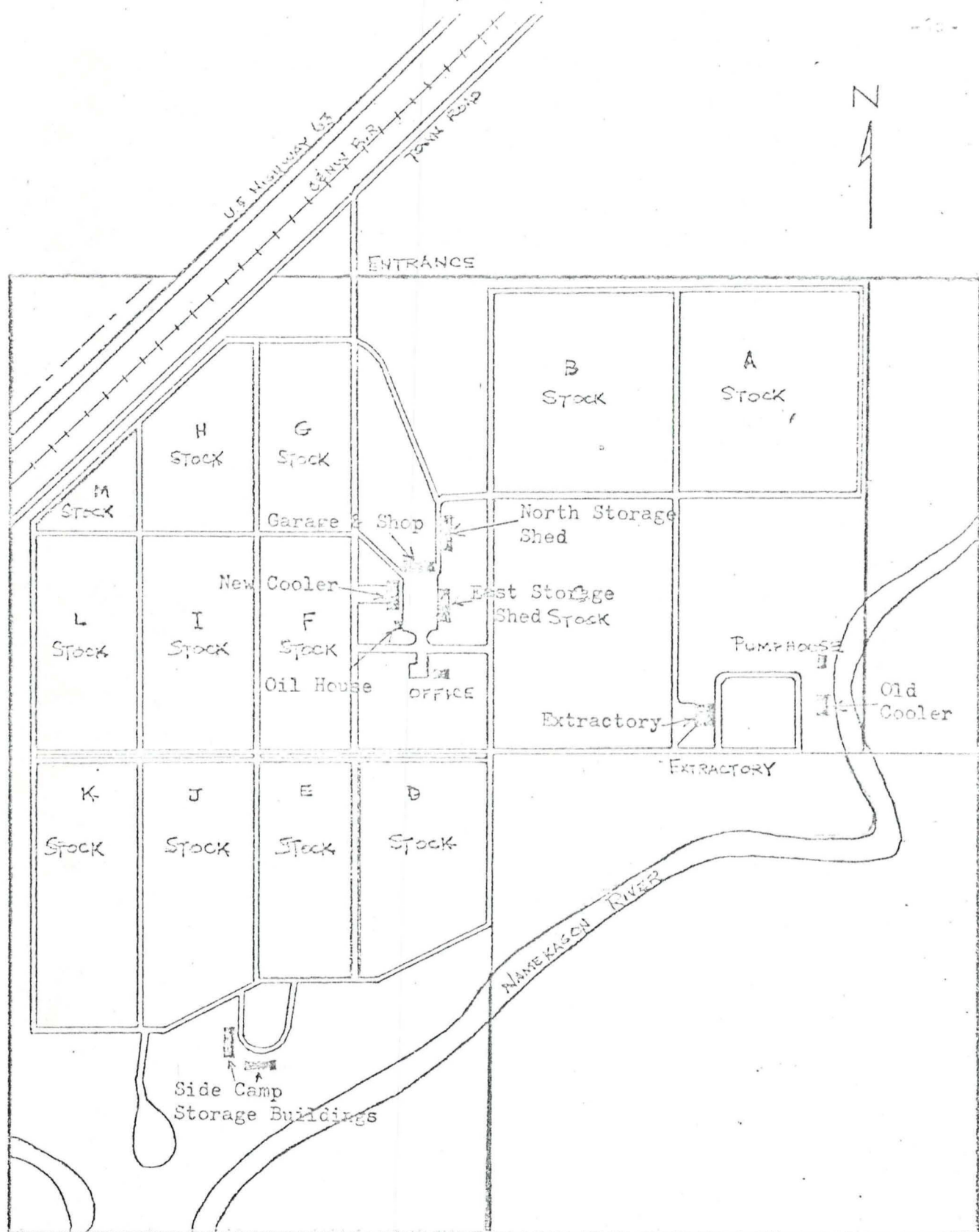


FIGURE 11



GRIFFITH STATE
 NURSERY
 Wisconsin Rapids, Wisconsin
 Original by H. R. Blevin,
 Modified by R. D. Shenefelt, W. H. Brener
 Scale 1" = approx. 333'. May 20, 1959

TO HAYWARD



SCALE: 1" = 400'

1967

HAYWARD STATE NURSERY

Total 116.38 Acres within marked green boundary.

FIGURE 12

WILSON STATE NURSERY
PLANTING BED LAYOUT
SCALE 1" = 200' APPROX.
Revised 7-29-77

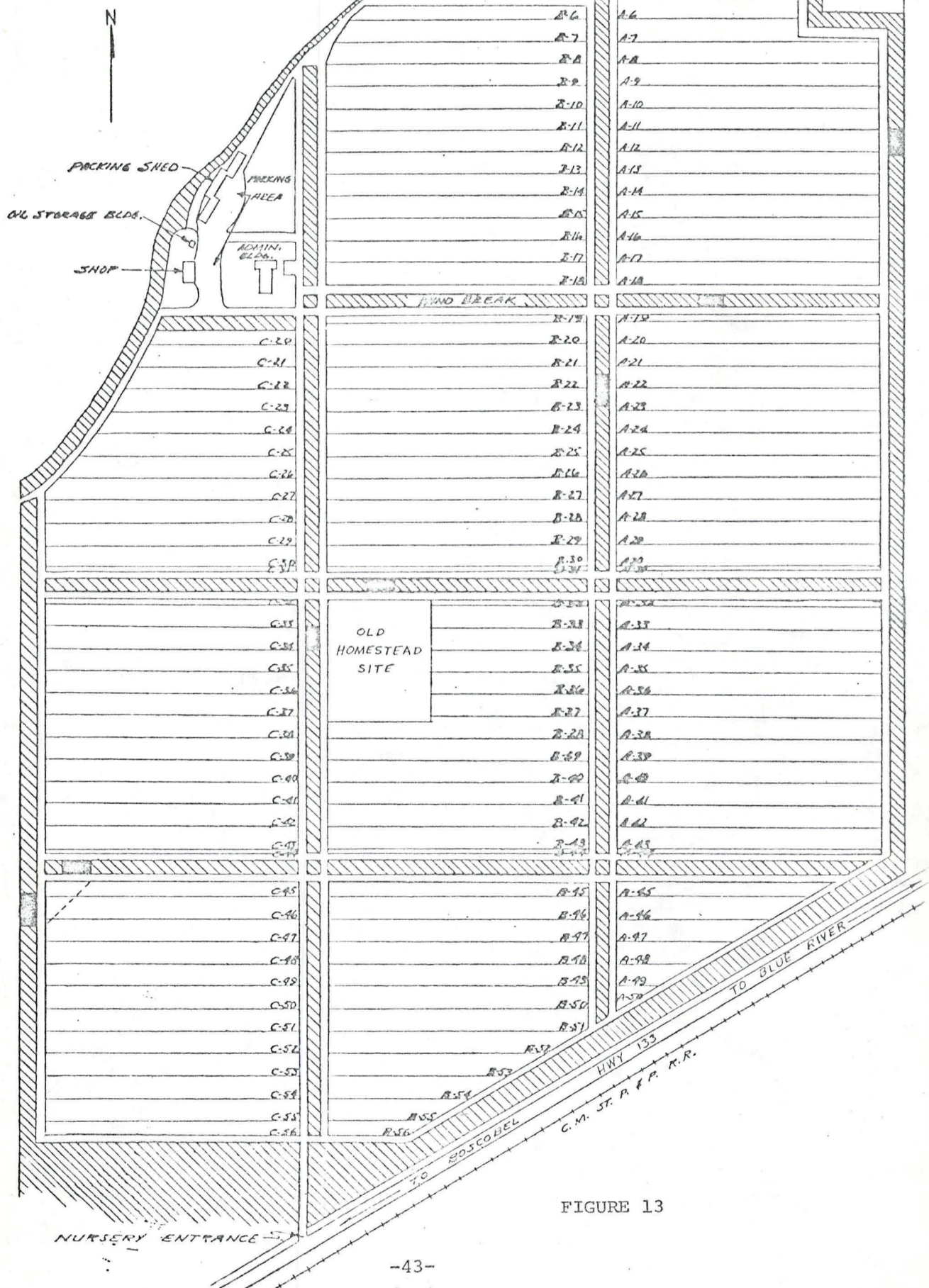


FIGURE 13

MICHIGAN COST ACCOUNTING FORMS

Nursery_____

[illegible]

| Nursery | Item |
|---------|------|
|---------|------|

[illegible]

NURSERY COST ACCOUNTING
USING THE SQUARE FOOT COST FACTOR

Nursery cost accounting determines the cost of nursery stock by species and class of stock.

Nursery costs will be kept by fiscal year beginning on July 1 and ending June 30 inclusive. The fiscal year is designated by the last half of the year.

The following forms will be used:

Form 4012 Time Card

4059 Time Card Summary

4060 Overhead Costs Summary

4063 Cost of Nursery Stock

4065 Depreciation Schedule

4066 Expendable Inventory

The explanation of the forms follow the "porcedure for computing Cost/M using cost factor".

PROCEDURE FOR COMPUTING COST/M USING COST FACTOR

The grand total of Overhead Costs Summary R-4060 will give the operation cost of the nursery for the fiscal year.

The total area in trees is obtained by totaling the areas on the nursery stock costs, R-4063.

Using the grand totals in dollars, from the Overhead Costs Summary, 4060, and dividing it by the total area in trees, from the Cost of Nursery Stock, 4063's, you compute the cost per square foot in trees for the fiscal year.

$$\text{Cost Factor per sq. ft. in dollars} = \frac{\text{Total Operating Cost in \$}}{\text{Total Area in Trees in sq. ft.}}$$

Example:

| | |
|--------------------------|---|
| Area in trees -- | 947,200 sq. ft. |
| Total Operating Cost -- | \$53,515.46 |
| Cost factor in sq. ft. = | $\frac{\$53,515.46}{947,200 \text{ sq. ft.}}$ |
| Cost Factor= | \$0.056 per sq. ft. |

Multiply the area (sq. ft.) of each species in each age class by cost per sq. ft.; divide by thousands of trees (M) from form 4063 and the cost per thousand to cost of trees brought forward from previous years to obtain the cost per thousand for each species and age class for the current year.

Example:

Austrian Pine - 2,800 sq. ft. and Inventory 20 M
 Cost Factor, .056
 Cost brought forward - \$14.83

| $\frac{\text{Area sq. ft.} \times \text{cost factor}}{\text{Inventory (M)}}$ | = | Current Cost + | $\frac{\text{Cost/M Brought forward}}{\text{Form 4063}}$ | = | $\frac{\text{Current Total Cost/M}}$ |
|--|---|----------------|--|---|--------------------------------------|
|--|---|----------------|--|---|--------------------------------------|

$$\frac{2,800 \text{ sq. ft.} \times .056}{20 \text{ M}} = \$7.31 + \$14.83 = \$22.67$$

The current total cost/M is entered on the Form "Nursery Stock Costs" 4063.

FORM 4012 - NURSERY TIME CARD

This form is kept for all nursery employees except those with permanent status.

"Soil Maintenance" includes the cost of labor for general soil management in the nursery. Included would be summer fallowing, the preparation for the seeding of soiling crops, labor in the loading, hauling, and spreading of fertilizer applied to fallow ground or a soiling crop, and the labor in the obtaining, hauling, and spreading of forest soil, and other related items.

"General Maintenance" includes the labor chargeable to construction or repair of equipment, buildings, fences, nursery grounds, hedges, shades, nursery roads, irrigation system, and similar items.

"Administration" labor costs would include assistance in inventories; clerical help if not a permanent employee; care of tree seed or cuttings in storage; sick leave, annual leave and holidays for seasonal workers, and others which apply.

"Tree Seed" includes all labor spent on procurement, processing and original storage of tree seeds or cuttings. The care of tree seed or cuttings while in storage is charged to administration.

"Seed Bed" labor costs will start with the preparation of the soil for tree seeding or for setting out cuttings and continues until after the seed is sown or the cuttings planted.

"Care" starts after the seed is sown or the cuttings planted and continues until lifting starts.

"Transplanting" costs will start with the preparation of the soil for the transplant beds and ends with the transplanting task completed. Transplanting costs will include the lifting charges for the stock which is transplanted in the nursery where the stock is grown. If the stock to be transplanted is from another nursery, the nursery furnishing the stock will include the lifting and packing charges in computing the cost of the stock and will provide the nursery doing the transplanting with this cost.

"L.P. & S." (Lift, Pack & Ship) includes time spent in lifting, counting, transporting, packing and shipping stock for transplanting, sale, gratis, or planting on state land.

FORM 4059 - TIME CARD SUMMARY

Summary of time cards by pay-roll periods. Nursery costs are kept on a fiscal year basis, accordingly when posting the first and last payroll periods include only those days which fall within the current fiscal year.

FORM 4060 - OVERHEAD COSTS SUMMARY

The "Overhead Cost Summary" is a listing of all overhead costs. The summary is made at the end of the fiscal year by tabulating the overhead invoices and bills recorded on Form R1131 and the "Expendable Inventory Record" (Form 4066). The labor costs which are chargeable to overhead are taken from the "Time Card Summary" (Form 4059). Salaries of permanent personnel are computed and are the last items to be entered on the form.

"Soil Maintenance" costs include agricultural seeds, fertilizer, insecticides, and similar items used for soiling crops.

"General Maintenance" costs include repair parts for equipment, CSS & M costs for buildings, fences, nursery grounds, irrigation system, packing materials, lumber, shades, and other items which apply.

"Administration" includes salaries of permanent employees, all travel vouchers, cost of electricity, telephone, gasoline and oil, office supplies, and any others of this nature.

"Depreciation" costs are taken from the "Depreciation Schedule" (Form 4065).

"Complete Loss of Stock" is taken from "Cost of Nursery Stock" (Form 4063) for the stock which was lost.

FORM 4063 - COST OF NURSERY STOCK

Cost of nursery stock is a compilation of all costs. The form is started at the time of seeding.

At the end of each fiscal year the cost of each species and class of stock will be computed.

"O-O" stock costs cover the period from the start of the preparation of the seed bed to June 30, inclusive.

Stock age changes on July 1.

| | | |
|----------------|------------------|-----------|
| SPECIES | CLASS | SEEDED |
| LOCATION | | |
| AREA | SEED SOURCE | CROP YEAR |
| INVENTORY DATE | INVENTORY AMOUNT | |

[illegible]

R 4063
1/70

TIME CARD

NAME _____

PAY PERIOD _____ to _____

NURSERY _____

PAY RATE _____ HR.

| DAY | DATE | HOURS | | | | | | | | | | | | | | | | | | | | | | |
|-------------|------|--------------------------|-----------------------------|---------------------|----------|-----------|----------------|------|-----------|------|-----------|------------|------|-----------|------|-----------|------|-----------|-------|--|--|------|-----------|--|
| | | OVERHEAD | | | | TREE SEED | CLASS OF STOCK | | | | | | | | | | | | OTHER | | | | | |
| | | SOIL MAINTEN- ANCE | GENERAL MAINTEN- ANCE | ADMINIS- TRATION | 0-1 | | 1-0 | | 2-0 | | 2-0-T | | 3-0 | | 2-1 | | 2-2 | | | | | | | |
| | | | | | SEED BED | | CARE | CARE | L.P. & S. | CARE | L.P. & S. | TRANSPLANT | CARE | L.P. & S. | CARE | L.P. & S. | CARE | L.P. & S. | | | | CARE | L.P. & S. | |
| SUNDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| MONDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| TUESDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| WEDNESDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| THURSDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| FRIDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| SATURDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| SUNDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| MONDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| TUESDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| WEDNESDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| THURSDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| FRIDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| SATURDAY | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL HOURS | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL COST | | | | | | | | | | | | | | | | | | | | | | | | |

SIGNED

MINNESOTA COST ACCOUNTING FORMS

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------|---|-----|--------|----------|--------------|----|-----------------------------|----|----|----|----|----|----|----|---|---|---|---|---------------------|-------|-------|---------|------|-----|-------------------|---|------------|---|----------------|---|------------------|---|-------|---|---|
| 0-0 | 073 | 072 | 071 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 3RD | 2ND | 7 | 4 | T | 2 | 1 | 7 | 4 | U | 2 | 1 |
| | NURSERY | | | A 81462X | | | SPECIES | | | | | | | | | | | | | | | | | | WORK CLASS NUMBER | | | | | | | | | | |
| 1-0 | NAME OF SPECIES | | | | | | | | | | | | | | | | | | AGE | BLOCK | COMP. | BED NO. | DATE | | | | | | | | | | CC | | |
| 2-0 | TYPE OF EQUIPMENT - USE SEPARATE CARD FOR EACH UNIT | | | | | | | | | | | | | | | | | | DESCRIPTION OF WORK | | | | | | | | | | WORK CLASS NO. | | X CORRECT FUND | | MONTH | | |
| 3-0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | SF | | | | |
| 4-0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | CM-4 | | | | |
| 2-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | SBE | | | | |
| 2-2 | UNIT NUMBER | | | | | | | | | | | | | | | | | | | | | | | | | | | | SBP | | DAY | | | | |
| REN-TAL | STATE OF MINN. DEPT. OF NATURAL RESOURCES NURSERY LABOR CARD NA-02100-01 (F-236) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | STATE OWNED | | RENTAL | | TOTAL AMOUNT | | NAME OR NUMBER OF EMPLOYEES | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U 2 | HOURS | | | | XXXX | | QUANTITY | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | RATE | | \$ | | | | RATE | | | | | | | | | | | | | | | | | | TOTAL HOURS | | AMOUNT | | \$ | | | | | | |
| 1 | AMOUNT | | \$ | | \$ | | BLOCK NUMBER | | | | | | | | | | | | | | | | | | COMP. NO. | | BED NUMBER | | FUND | | EQUIPMENT NUMBER | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

GENERAL ANDREWS NURSERY
1978 Cost Accounts

Page No.

| | |
|-----|--|
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TOTAL COSTS 1978

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|--|------------|-----------|------------------------------|------------|---------------------------------------|------------|---|---|---|----|----|
| | Labor | Equipment | Direct Materials Costs | Overhead | Depr. of Red Boards & Snowfence | TOTAL | | | | | |
| Seeding - Spring 1978 | 2,006.71 | 25.88 | 6,452.83 | 1,696.62 | 602.00 | 10,784.11 | | | | | |
| Seeding - Fall 1978 | 10,351.41 | 1,287.38 | 134.56 | 8,944.52 | | 20,717.87 | | | | | |
| Direct Costs on 1-0 | 16,911.31 | 149.40 | 591.68 | 14,541.02 | | 32,193.41 | | | | | |
| Direct Costs on 2-0 | 4,528.52 | 68.04 | 791.75 | 3,828.43 | | 9,217.64 | | | | | |
| Direct Costs on 3-0 | 1,137.16 | 28.35 | 472.88 | 961.48 | | 2,599.87 | | | | | |
| Direct Costs on 2-1 | 293.49 | 5.06 | 26.63 | 248.15 | | 573.33 | | | | | |
| Added to Pkg. Direct Costs on 2-2 | 942.98 | 12.17 | 243.71 | 797.29 | | 1,996.15 | | | | | |
| Snowmaking | 2,424.73 | 2,408.97 | 1,444.75 | 2,050.14 | | 8,328.59 | | | | | |
| Peating | 1,098.38 | 725.51 | | 928.68 | | 2,752.57 | | | | | |
| Summer Fallow & Cover Crop | 2,491.65 | 909.58 | 1,087.60 | 2,106.71 | | 6,595.54 | | | | | |
| Irrigation | 5,446.09 | 1,143.20 | 554.25 | 6,977.26 | | 14,120.80 | | | | | |
| Misc. (Added to Overhead) | 17,877.41 | 3,579.98 | 1,081.41 | | | 22,538.80 | | | | | |
| Transplanting | 8,009.26 | 253.34 | 14.85 | 6,771.90 | | 15,049.35 | | | | | |
| Cuttings | 2,182.65 | 10.77 | 2.52 | 1,843.45 | | 4,041.39 | | | | | |
| Packing - Spring 1978 | 77,763.07 | 2,170.02 | 10,008.66 | 66,234.03 | | 156,175.78 | | | | | |
| Packing - Fall 1978 | 13,219.94 | 523.77 | 192.14 | 11,662.23 | | 25,598.08 | | | | | |
| Moss | 1,827.01 | 503.54 | 17.44 | 1,544.75 | | 3,892.74 | | | | | |
| Seed & Cone Coll. & Extr. | 1,062.22 | 86.83 | | 898.12 | | 2,047.17 | | | | | |
| Coop. - Badoura | 859.54 | 479.78 | | | | 1,339.32 | | | | | |
| Coop. - Other Areas | 366.36 | 1,511.30 | | 309.76 | | 2,187.42 | | | | | |
| Coop. - Other Agencies | 24.52 | 92.22 | | 20.74 | | 137.48 | | | | | |
| Fire Suppression | 665.11 | 168.09 | | 562.36 | | 1,395.56 | | | | | |
| Tree Improvement | 9,479.20 | 2,395.72 | 1,879.72 | 8,137.79 | | 21,891.84 | | | | | |
| TOTAL | 180,968.72 | 18,540.11 | 24,997.38 | 141,067.50 | 602.00 | 365,175.71 | | | | | |
| Less Misc. (Which is added to overhead) | -17,877.41 | -3,579.98 | -1,081.41 | | | -22,538.80 | | | | | |
| TOTAL | 163,091.31 | 14,960.13 | 23,915.97 | 141,067.50 | 602.00 | 343,636.91 | | | | | |

Am

SEEDING COST ANALYSIS

FALL 1977 - SPRING 1978

| Species & Number Seeded | Cost Classification | Cost of Seed | Soil of Sterilant | Hydro-Mulch | Seedbed Preparation & Seeding | Depr. of Bed Boards | Depr. Of Snowfence | Overhead | Seeding Total | Cost per M |
|-------------------------|---------------------|--------------|-------------------|-------------|-------------------------------|---------------------|--------------------|----------|---------------|------------|
| HARDWOOD | Labor | | | | 1,788.33 | | | | 1,788.33 | 1.01 |
| | Equipment | | | | 402.58 | | | | 402.58 | .23 |
| | Material | 9,266.60 | 2,166.51 | 192.19 | 33.12 | | | | 11,658.42 | 6.60 |
| | Overhead | | | | | | | 1,447.98 | 1,447.98 | .82 |
| | Total | 9,266.60 | 2,166.51 | 192.19 | 2,224.03 | | | 1,447.98 | 15,297.31 | 8.66 |
| 1,767,080 | Cost per M | 5.24 | 1.23 | 11 | 1.26 | | | .82 | 8.66 | |
| PINE | Labor | | | | 3,198.68 | | | | 3,198.68 | .39 |
| | Equipment | | | | 636.01 | | | | 636.01 | .08 |
| | Material | 8,055.26 | 3,808.39 | 770.06 | 66.42 | | | | 12,700.13 | 1.53 |
| | Overhead | | | | | | | 2,604.10 | 2,604.10 | .32 |
| | Total | 8,055.26 | 3,808.39 | 770.06 | 3,901.11 | | | 2,604.10 | 19,138.92 | 2.32 |
| 8,240,000 | Cost per M | .98 | .46 | .09 | .42 | | | .32 | 2.32 | |
| SPRUCE | Labor | | | | 6,761.23 | | | | 6,761.23 | 2.00 |
| | Equipment | | | | 439.35 | | | | 439.35 | .13 |
| | Material | 2,914.28 | 1,627.52 | 339.00 | 105.55 | 292.40 | 309.60 | | 5,588.35 | 1.66 |
| | Overhead | | | | | | | 5,369.26 | 5,369.26 | 1.59 |
| | Total | 2,914.28 | 1,627.52 | 339.00 | 7,306.13 | 292.40 | 309.60 | 5,369.26 | 18,158.19 | 5.38 |
| 3,375,000 | Cost per M | .86 | .48 | .10 | 2.17 | .09 | .09 | 1.59 | 5.38 | |
| TOTAL | Labor | | | | 11,748.24 | | | | 11,748.24 | .88 |
| | Equipment | | | | 1,477.94 | | | | 1,477.94 | .11 |
| | Material | 20,236.14 | 7,602.42 | 1,301.25 | 205.09 | 292.40 | 309.60 | | 29,946.90 | 2.24 |
| | Overhead | | | | | | | 9,421.34 | 9,421.34 | .70 |
| | Total | 20,236.14 | 7,602.42 | 1,301.25 | 13,431.27 | 292.40 | 309.60 | 9,421.34 | 52,594.42 | 3.93 |
| 13,382,080 | Cost Per M | 1.52 | .57 | .10 | 1.00 | .02 | .02 | .70 | 3.93 | |

1-Q COST ANALYSIS 1978

| Species & Inventory | Cost Classification | Care Of Seedbeds | Weeding | Irrigation | Peat | Cover Crop & Summer Fallow | Overhead | 1-0 Total | Seeding Cost | Total Cost | Cost per M |
|---------------------|---------------------|------------------|-----------|------------|------|----------------------------|-----------|-----------|--------------|------------|------------|
| HARDWOOD | Labor | 240.27 | 2,144.06 | 627.61 | | 1,085.51 | | 4,097.45 | 1,788.33 | 5,885.78 | 4.19 |
| | Equipment | 6.75 | 10.36 | 131.80 | | 210.10 | | 359.21 | 402.58 | 761.79 | .54 |
| | Material | 71.97 | 5.79 | 63.85 | | 505.23 | | 646.84 | 11,058.42 | 12,305.26 | 8.75 |
| | Overhead | | | | | | 4,822.32 | 4,822.32 | 1,447.98 | 6,270.30 | 4.46 |
| | Total | 318.99 | 2,160.11 | 823.26 | | 1,800.84 | 4,822.32 | 9,925.82 | 15,297.31 | 29,223.13 | |
| 1,405,700 | Cost per M | 23 | 1.54 | .58 | | 1.28 | 3.43 | 7.06 | 10.88 | 17.94 | |
| PINE | Labor | 1,372.10 | 6,173.66 | 1,080.13 | | 967.24 | | 9,593.63 | 3,198.68 | 12,792.31 | 2.13 |
| | Equipment | 38.60 | 30.41 | 226.75 | | 124.58 | | 420.34 | 636.01 | 1,056.35 | .18 |
| | Material | 148.62 | 237.39 | 109.98 | | 315.62 | | 811.61 | 12,700.13 | 13,511.74 | 2.25 |
| | Overhead | | | | | | 10,028.53 | 10,028.53 | 2,604.10 | 12,632.63 | 2.11 |
| | Total | 1,559.32 | 6,441.46 | 1,416.86 | | 1,407.94 | 10,028.53 | 20,854.11 | 19,138.92 | 39,993.03 | |
| 5,999,000 | Cost per M | 26 | 1.07 | .24 | | .24 | 1.62 | 3.48 | 3.12 | 6.67 | |
| SPRUCE | Labor | 1,236.97 | 5,744.25 | 459.72 | | 712.33 | | 8,153.27 | 6,761.23 | 14,914.50 | 5.60 |
| | Equipment | 34.77 | 28.31 | 96.48 | | 102.92 | | 262.48 | 439.35 | 701.83 | .26 |
| | Material | 54.46 | 70.45 | 46.78 | | 158.55 | | 333.24 | 5,588.35 | 5,921.59 | 2.22 |
| | Overhead | | | | | | 7,994.26 | 7,994.26 | 5,369.26 | 13,363.52 | 5.01 |
| | Total | 1,329.20 | 5,843.01 | 602.98 | | 973.80 | 7,994.26 | 16,743.25 | 18,158.19 | 34,901.44 | |
| 2,666,000 | Cost per M | 50 | 2.12 | .23 | | .36 | 3.00 | 6.28 | 6.81 | 13.09 | |
| TOTAL | Labor | 2,849.34 | 14,061.97 | 2,167.46 | | 2,765.58 | | 21,844.35 | 11,748.24 | 33,592.59 | 3.34 |
| | Equipment | 80.12 | 69.28 | 455.03 | | 437.60 | | 1,042.03 | 1,477.94 | 2,519.97 | .25 |
| | Material | 278.05 | 313.63 | 220.61 | | 979.40 | | 1,791.69 | 29,946.90 | 31,738.59 | 3.15 |
| | Overhead | | | | | | 22,845.11 | 22,845.11 | 9,421.34 | 32,266.45 | 3.20 |
| | Total | 3,207.51 | 14,444.88 | 2,843.10 | | 4,182.58 | 22,845.11 | 42,523.78 | 52,594.42 | 100,117.60 | |
| 10,970,700 | Cost per M | 32 | 1.43 | .28 | | .42 | 2.27 | 4.72 | 5.22 | 9.94 | |

2-0 COST ANALYSIS 1978

| Species & Inventory | Cost Classification | Care of Seedbeds | Weeding | Irrigation | Overhead | 2-0 Total | Cost of Stock at 1-0 | Stock Removed at 1-0 | Costs Subtr. for Stock Removed | Subtr. Total Cost on Remaining stock | Cost per M |
|---------------------|---------------------|------------------|----------|------------|----------|-----------|----------------------|----------------------|--------------------------------|--------------------------------------|------------|
| HARDWOOD | Labor | 244.81 | 596.76 | 293.74 | | 1,135.31 | 7,141.11 | | - 2,375.40 | 5,901.02 | 8.56 |
| | Equipment | 6.89 | 2.94 | 61.64 | | 71.47 | 1,049.53 | | - 350.76 | 770.24 | 1.12 |
| | Material | 45.65 | | 29.90 | | 75.55 | 10,516.32 | (444,000 trees) | - 3,498.72 | 7,093.15 | 10.30 |
| | Overhead | | | | 1,472.57 | 1,472.57 | 5,924.73 | | - 1,971.36 | 5,425.94 | 2.88 |
| | Total | 297.35 | 599.70 | 385.28 | 1,472.57 | 2,754.90 | 24,631.69 | | - 8,196.24 | 19,190.35 | |
| 688,800 | Cost per M | 43 | 87 | 56 | 2.14 | 4.00 | 35.76 | | - 11.90 | 22.86 | |
| PINE | Labor | 675.04 | 976.12 | 999.48 | | 2,650.64 | 12,369.68 | | | 15,020.32 | 2.61 |
| | Equipment | 18.97 | 4.81 | 209.90 | | 233.68 | 1,476.41 | | | 1,710.09 | 30 |
| | Material | 220.83 | 328.10 | 101.78 | | 650.71 | 11,969.54 | | | 12,620.25 | 2.19 |
| | Overhead | | | | 3,989.01 | 3,989.01 | 10,306.45 | | - | 14,295.46 | 2.49 |
| | Total | 914.84 | 1,309.03 | 1,311.16 | 3,989.01 | 7,524.04 | 36,122.08 | | | 43,646.12 | |
| 5,753,000 | Cost per M. | 16 | 23 | 23 | 69 | 1.31 | 6.28 | | | 7.59 | |
| SPRUCE | Labor | 1,091.53 | 944.26 | 339.34 | | 2,375.13 | 13,429.61 | | | 15,804.74 | 14.43 |
| | Equipment | 30.68 | 4.65 | 71.29 | | 106.62 | 897.04 | | | 1,003.66 | 92 |
| | Material | 80.40 | 116.77 | 34.54 | | 231.71 | 4,275.31 | | | 4,507.02 | 4.12 |
| | Overhead | | | | 2,601.07 | 2,601.07 | 10,693.37 | | | 13,294.44 | 12.14 |
| | Total | 1,202.61 | 1,065.68 | 445.17 | 2,601.07 | 5,314.53 | 29,295.33 | | | 34,609.86 | |
| 1,095,000 | Cost per M | 1.10 | 97 | 41 | 2.38 | 4.86 | 26.75 | | | 31.61 | |
| TOTAL | Labor | 2,011.38 | 2,517.14 | 1,632.86 | | 6,161.38 | 32,940.40 | | - 2,375.40 | 36,726.58 | 4.88 |
| | Equipment | 56.54 | 12.40 | 342.83 | | 411.77 | 3,422.98 | | - 350.76 | 3,483.99 | 46 |
| | Material | 346.88 | 444.87 | 166.22 | | 957.97 | 26,761.17 | | - 3,498.72 | 24,220.42 | 3.21 |
| | Overhead | | | | 8,062.65 | 8,062.65 | 26,924.55 | (444,000) | - 1,971.36 | 33,015.84 | 4.38 |
| | Total | 2,414.80 | 2,974.41 | 2,141.91 | 8,062.65 | 15,593.77 | 90,049.10 | | - 8,196.24 | 97,446.63 | |
| 7,536,800 | Cost per M | 32 | 40 | 28 | 1.07 | 2.07 | 11.95 | | - 1.09 | 12.93 | |

3-0 COST ANALYSIS 1978

| Species & Inventory | Cost Classification | Care of Seedbeds | Weeding | Irrigation | Overhead | 3-0 Total | Cost of Stock at 2-0 | Shipped or Transplanted at 2-0 | Cost Subt Removed for Stock | Total Cost on Remain- ing Stock | Cost per M |
|---------------------|---------------------|------------------|---------|------------|----------|-----------|----------------------|--------------------------------|-----------------------------|---------------------------------|------------|
| PINE | Labor | 694.65 | 86.76 | 591.14 | | 1,372.55 | 11,862.05 | | - 1,648.28 | 11,586.32 | 4.62 |
| | Equipment | 19.52 | 13 | 124.04 | | 143.99 | 1,697.87 | | - 236.13 | 1,605.73 | 64 |
| | Material | 145.05 | 209.41 | 60.14 | | 414.58 | 10,332.41 | | - 1,439.95 | 9,707.06 | 3.71 |
| | Overhead | | | | 2,193.39 | 2,193.39 | 10,720.31 | (463,000) | - 1,490.86 | 11,422.84 | 4.55 |
| | Total | 859.20 | 296.60 | 775.32 | 2,193.39 | 4,124.51 | 34,612.64 | (trees) | - 4,815.20 | 33,921.95 | |
| 2,510,000 | Cost per M | 34 | 12 | 31 | 88 | 1.65 | 13.79 | | - 1.92 | 13.52 | |
| SPRUCE | Labor | 286.47 | 69.28 | 361.23 | | 716.98 | 12,518.08 | | - 2,071.80 | 11,163.26 | 14.15 |
| | Equipment | 8.06 | 34 | 75.80 | | 84.20 | 992.59 | | - 163.80 | 912.99 | 1.16 |
| | Material | 47.99 | 20.45 | 36.75 | | 155.19 | 3,732.28 | | - 617.40 | 3,270.07 | 4.14 |
| | Overhead | | | | 1,237.26 | 1,237.26 | 11,091.52 | (180,000 trees) | - 1,834.20 | 10,494.58 | 13.30 |
| | Total | 342.52 | 140.07 | 473.78 | 1,237.26 | 2,193.63 | 28,334.47 | | - 4,687.20 | 25,840.90 | |
| 789,000 | Cost per M | 43 | 18 | 60 | 1.57 | 2.78 | 35.91 | | - 5.94 | 32.25 | |
| TOTAL | Labor | 981.12 | 156.04 | 957.37 | | 2,089.53 | 24,380.13 | | - 3,720.08 | 22,749.58 | 6.90 |
| | Equipment | 27.58 | 77 | 199.85 | | 228.20 | 2,590.46 | | - 399.93 | 2,518.73 | 76 |
| | Material | 193.02 | 279.86 | 96.89 | | 569.77 | 14,064.69 | | - 2,057.33 | 12,577.13 | 3.81 |
| | Overhead | | | | 3,430.66 | 3,430.66 | 21,811.83 | (643,000 trees) | - 3,325.06 | 21,912.43 | 6.64 |
| | Total | 1,201.72 | 436.67 | 1,249.11 | 3,430.66 | 6,318.16 | 62,947.11 | | - 9,502.40 | 59,262.87 | |
| 3,299,000 | Cost per M | 35 | 13 | 38 | 1.04 | 1.91 | 19.08 | | - 2.88 | 18.11 | |

4-0 COST ANALYSIS 1978

| Species & Inventory | Cost Classification | Care of Seedbeds | Weeding | Irrigation | Overhead | Total | Remaining Costs from 3-0 | Total Cost | Cost per M |
|---------------------|---------------------|------------------|---------|------------|----------|-------|--------------------------|------------|------------|
| PINE | Labor | | | | | | 2,200.00 | 2,200.00 | 2.75 |
| | Equipment | | | | | | 264.00 | 264.00 | .33 |
| | Material | | | | | | 1,056.00 | 1,056.00 | 1.32 |
| | Overhead | | | | | | 2,344.00 | 2,344.00 | 2.93 |
| | Total | | | | | | 5,864.00 | 5,864.00 | |
| 800,000 | Cost per M | | | | | | 7.33 | 7.33 | |
| SPRUCE | Labor | | | | | | 396.55 | 396.55 | 11.33 |
| | Equipment | | | | | | 21.70 | 21.70 | .62 |
| | Material | | | | | | 143.50 | 143.50 | 4.10 |
| | Overhead | | | | | | 434.35 | 434.35 | 12.41 |
| | Total | | | | | | 996.10 | 996.10 | |
| 35,000 | Cost per M | | | | | | 28.46 | 28.46 | |
| TOTAL | Labor | | | | | | 2,596.55 | 2,596.55 | 3.11 |
| | Equipment | | | | | | 285.70 | 285.70 | .34 |
| | Material | | | | | | 1,199.50 | 1,199.50 | 1.44 |
| | Overhead | | | | | | 2,778.35 | 2,778.35 | 3.33 |
| | Total | | | | | | 6,860.10 | 6,860.10 | |
| 835,000 | Cost per M | | | | | | 8.22 | 8.22 | |

2-1 COST ANALYSIS 1978

| Species & Inventory | Cost Classification | 1 Care of Seedbeds | 2 Weeding | 3 Irrigation | 4 Peat | 5 Cover Crop & Summer Fallow | 6 Overhead | 7 2-1 Total | 8 Trans- planting Cost | 9 Cost of Stock trans- planted | 10 Total Cost | 11 Cost per M |
|---------------------------|------------------------|-----------------------------|--------------|-----------------|-----------|---------------------------------------|---------------|-------------------|---------------------------------|---|---------------------|------------------------|
| | Labor | 155.75 | 137.74 | 248.15 | | 575.56 | | 1,117.20 | 8,009.26 | 2,883.48 | 12,009.94 | 37.07 |
| | Equipment | 4.38 | 68 | 52.07 | | 123.80 | | 180.93 | 253.34 | 280.08 | 714.35 | 2.20 |
| MISC. | Material | 26.63 | | 25.24 | | 63.51 | | 115.38 | 1,110.37 | 1,226.48 | 2,352.75 | 7.88 |
| CONIFERS | Overhead | | | | | | 1,561.62 | 1,561.62 | 6,721.09 | 2,568.36 | 10,901.07 | 33.65 |
| | Total | 186.76 | 138.42 | 325.46 | | 762.87 | 1,561.62 | 2,975.13 | 16,144.06 | 7,058.40 | 26,177.59 | |
| 324,000 | Cost per M | 58 | 43 | 1.00 | | 2.35 | 4.82 | 9.18 | 49.83 | 21.72 | 80.80 | |

2-2 COST ANALYSIS. 1978

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---------------------------|------------------------|------------------------|---------|------------|----------|--------------|---------------------------|---------------|------------------|----|
| Species & Inventory | Cost Classification | Care of Seedbeds | Weeding | Irrigation | Overhead | 2-2 Total | Cost of Stock @ 2-1 | Total Cost | Cost per M | |
| | Labor | 303.12 | 639.86 | 445.25 | | 1,388.23 | 17,768.89 | 19,157.12 | 31.22 | |
| | Equipment | 8.52 | 3.65 | 93.42 | | 105.59 | 1,164.67 | 1,270.26 | 2.12 | |
| MISC. | Material | 57.85 | 185.86 | 45.29 | | 289.00 | 1,454.85 | 1,743.85 | 2.91 | |
| CONIFERS | Overhead | | | | 1,951.39 | 1,951.39 | 15,312.39 | 17,263.78 | 28.82 | |
| | Total | 369.49 | 829.37 | 583.96 | 1,951.39 | 3,724.21 | 33,700.80 | 39,435.01 | | |
| 592,000 | Cost per M | 62 | 1.28 | .98 | 3.26 | 6.24 | 59.60 | 65.84 | | |

PACKING MATERIAL

Fall 1977 - Spring 1978

| | | Cost per M |
|-----------------------------------|-----------------|------------|
| Twine | \$ 535.54 | \$.07 |
| Packing Paper | 4,556.00 | .56 |
| Shipping Bags | 525.66 | .07 |
| Bale Ties | 231.80 | .03 |
| Moss | 3,231.34 | .40 |
| Twisting Sticks | 649.93 | .08 |
| Staples, tubs, eyelets, tags etc. | 178.39 | .02 |
| Material for Fall apcking | 624.52 | .08 |
| Snowmaking Material | <u>1,444.75</u> | .18 |
| Total | \$12,077.93 | \$1.49 |

TOTAL TREES SHIPPED 8,124,110

TOTAL PACKING COSTS
Fall 1977 - Spring 1978

| | <u>Fall</u> | <u>Spring</u> | <u>Total</u> | <u>Cost per M</u> |
|-----------|-------------|---------------|--------------|---------------------------|
| Labor | \$16,014.55 | \$80,187.80 | \$96,202.35 | \$11.8 |
| Equipment | 1,040.35 | 4,578.99 | 5,619.34 | .6 |
| Material | 624.52 | 11,453.41 | 12,077.93 | 1.4 |
| Overhead | 12,698.91 | 68,234.17 | 80,933.08 | 9.9 |
| Total | \$30,378.33 | \$164,504.37 | \$194,882.70 | \$23.99 |

TOTAL TREES SHIPPED 8,124,110 \$23.99 per M.

Above costs include snowmaking costs of:

| | |
|-----------|--|
| Labor | \$2,424.73 |
| Equipment | 2,408.97 |
| Material | 1,444.75 |
| Overhead | <u>2,050.14</u> |
| Total | \$8,328.59, which was spread out over 1.5 million trees. |

SEEDING MATERIALS BREAKDOWN

Fall 1977 - Spring 1978

| | | <u>Cost per M</u> |
|--------------------------------|---------------|-------------------|
| Seed | \$20,236.14 | \$1.51 |
| Soil Sterilant | 7,602.42 | .57 |
| Hydromulch | 1,301.25 | .10 |
| Fertilizer | 97.80 | .01 |
| Misc. (Bed Bds, nails etc.) | 107.29 | .01 |
| Deprec. Bed Boards | 292.40 | .02 |
| " Snowfence | <u>309.60</u> | <u>.02</u> |
| TOTAL | \$29,946.90 | \$2.24 |

TOTAL SEEDING COST
Fall 1977 - Spring 1978

| | | <u>Cost per M</u> |
|-----------|-----------------|-------------------|
| Labor | \$11,748.24 | \$.88 |
| Equipment | 1,477.94 | .11 |
| Material | 29,946.90 | 2.24 |
| Overhead | <u>9,421.34</u> | <u>.70</u> |
| TOTAL | \$52,594.42 | \$3.93 |

TOTAL TREES SEEDED 13,382,000

1978

MOTORIZED EQUIPMENT DEPRECIATION

(20% Annually)

| | <u>Year Depr. Started</u> | <u>Cost</u> | <u>1978 Depr.</u> | <u>Present Value</u> |
|-------------------------------------|-------------------------------|-------------|-----------------------|--------------------------|
| 5009-318803 Concord AMC 4 Door Car | 1978 | 53,920.60 | 5 784.12 | 53,136.48 |
| 1246-174394 Dodge 4 x 4 Pickup | 1974 | 3,790.00 | 758.00 | 0 |
| 938-169501 Farmall Hydro 70 Tractor | 1974 | 8,956.00 | 1,791.20 | 0 |
| 938-189536 Farmall Cub | 1975 | 2,794.00 | 558.80 | 558.80 |
| 624-255867 Onan Generator | 1977 | 4,495.00 | 899.00 | 2,697.00 |

1978

BREAKDOWN OF OVERHEAD COSTS

| | | <u>% of Total</u> |
|----------------------------------|-----------------|-------------------|
| St. Paul, Region & Area Overhead | \$36,620.00 | 21.7 |
| G. A. N. Saleries | 54,161.73 | 38.4 |
| Misc. G. A. N. Labor | 26,568.57 | 13.8 |
| Elec., Comm., Fuel, Travel, etc. | 11,023.38 | 7.8 |
| Misc. Supplies | 1,081.41 | .8 |
| Misc. Equipment Costs | 3,579.98 | 2.5 |
| Badoura's Costs to G. A. N. | 2,817.16 | 2.0 |
| ✓ Depr. of Capital Investments | 8,892.73 | 6.3 |
| ✓ Depr. of Irrigation System | <u>2,372.54</u> | 1.7 |
| TOTAL | \$141,117.50 | |

GENERAL ANDREWS NURSERY

TABLE OF CAPITAL INVESTMENT DEPRECIATION

| | Year Depr. Started | Acquired Cost | Rate of Depr. | Annual Depr. | Total Depr. to Date | Present Value |
|--------------------------------------|--------------------------|-------------------|---------------------|------------------|---------------------------|-------------------|
| Addition to Admin. Bldg. #1626-540 | 1973 | 70,678.79 | 3% | 2,120.36 | 12,722.16 | 57,956.63 |
| Pkg. & Equip. Bldg. #1626-645 | 1956 | 15,427.00 | 3% | 462.81 | 10,644.63 | 4,782.37 |
| Addition to Pkg. Bldg. #1626-645 | 1964 | 19,696.19 | 3% | 590.89 | 7,681.57 | 12,014.62 |
| Residence #1626-653 | 1956 | 13,324.63 | 3% | 399.74 | 9,194.07 | 4,130.61 |
| Equip. Storage Garage #1626-751 | 1963 | 11,074.20 | 3% | 332.23 | 5,315.68 | 5,758.52 |
| Garage at Residence #1626-750 | 1963 | 1,100.00 | 3% | 33.00 | 528.00 | 572.00 |
| Laboratory & Office | 1969 | 24,403.85 | 3% | 732.12 | 7,321.20 | 17,082.65 |
| Freezer Add. to Pkg. Bldg. #1626-645 | 1977 | 66,176.00 | 3% | 1,985.28 | 3,970.56 | 62,205.44 |
| Lab. Drying Oven #341-146561 | 1974 | 289.77 | 20% | 57.97 | 289.77 | 0 |
| Adding Machine #150-249236 | 1976 | 157.61 | 20% | 31.52 | 94.56 | 63.05 |
| Typewriter #151-243581 | 1976 | 374.00 | 20% | 74.80 | 224.40 | 149.60 |
| Copier #187-250462 | 1976 | 383.90 | 20% | 76.78 | 230.34 | 153.56 |
| Floor Jack #493-248452 | 1976 | 323.00 | 20% | 64.60 | 193.80 | 129.20 |
| TOTAL-BLDGS. & EQUIPMENT | | 223,408.24 | | 6,262.10 | 58,410.69 | 164,998.25 |
| Land Development | 1959 | 7,368.75 | 5% | 368.39 | 7,368.75 | 0 |
| " " | 1960 | 9,400.00 | 5% | 470.05 | 8,930.95 | 469.05 |
| " " | 1961 | 10,827.44 | 5% | 541.37 | 9,744.66 | 1,082.78 |
| " " | 1962 | 5,144.70 | 5% | 257.24 | 4,303.08 | 841.62 |
| " " | 1964 | 2,204.14 | 5% | 110.21 | 1,653.15 | 550.99 |
| " " | 1965 | 1,791.79 | 5% | 89.59 | 1,254.26 | 537.53 |
| " " | 1966 | 1,412.01 | 5% | 70.60 | 917.80 | 494.21 |
| " " | 1967 | 663.61 | 5% | 33.18 | 398.16 | 265.45 |
| TOTAL - LAND DEVELOPMENT | | 38,812.44 | | 1,930.63 | 34,570.81 | 4,241.63 |
| Well House #1626-671 | 1957 | 1,000.00 | 3% | 30.00 | 660.00 | 340.00 |
| Sprinkler System | 1960 | 19,114.35 | 5% | 955.72 | 18,158.68 | 955.67 |
| " " | 1961 | 8,996.22 | 5% | 449.81 | 8,096.58 | 899.64 |
| " " | 1962 | 5,297.04 | 5% | 264.85 | 4,502.45 | 794.59 |
| " " | 1963 | 2,694.58 | 5% | 134.73 | 2,155.68 | 538.90 |
| " " | 1965 | 1,379.45 | 5% | 68.97 | 965.58 | 413.87 |
| " " | 1966 | 4,869.28 | 5% | 243.46 | 3,164.28 | 1,704.30 |
| " " | 1969 | 3,675.00 | 5% | 183.75 | 1,837.50 | 1,837.50 |
| " " | 1970 | 825.00 | 5% | 41.25 | 371.25 | 453.75 |
| TOTAL IRRIGATION SYSTEM | | 47,850.92 | | 2,372.54 | 39,912.70 | 7,938.22 |
| GRAND TOTAL | | 310,072.30 | | 11,265.27 | 132,894.20 | 177,178.10 |

WISCONSIN COST ACCOUNTING FORMS

Time Report Codes - Forest Management

| <u>Code</u> | <u>Function</u> |
|-------------|---|
| 13-13607 | <u>Equipment</u> Maintenance of all equipment used for maintenance and development. Include maintenance of hand and power tools, lawn mowers, shop equipment, and all automotive equipment that is not part of the Heavy Equipment Pool. <u>Do not</u> include time spent in maintenance of equipment used by the public such as swings, and diving rafts. |
| 13-13608 | 13-12608 <u>Buildings and Grounds</u> Maintenance and development of buildings and grounds not associated with a public use area. |
| 13-13711 | <u>Moss Sales</u> Record all activities |
| 13-15740 | <u>Law Enforcement - State Lands</u> Record time involved in enforcement of Code 45 on State Forest properties. |
| 13-22014 | <u>Naturalist Program</u> Include preparation time in addition to presentations. |
| 13-25011 | <u>Sticker Sales</u> Record time spent selling admission stickers. |
| | <u>STATE NURSERIES</u> |
| | <u>Care of Stock</u> Weeding, irrigation, mulching, insect and disease control, application of herbicides, fertilizing, and repair of sprayers. |
| 13-14901 | Conifer Seedlings |
| 13-14902 | Hardwoods |
| 13-14903 | Game Shrubs |
| 13-14904 | Transplants |
| | <u>Seeding</u> Seeding, seed bed preparation. |
| 13-14911 | Conifers |
| 13-14912 | Hardwoods |
| 13-14913 | Shrubs |
| 13-14920 | <u>Transplanting</u> Bed preparation, lifting and sorting of stock. |
| | <u>Lifting</u> Lifting of trees, transporting to packing shed. Do not include lifting of stock to be transplanted. |
| 13-14921 | Conifers |
| 13-14922 | Hardwoods |
| 13-14923 | Shrubs |

Effective 6/18/78

Time Report Codes - Forest Management

| <u>Code</u> | <u>Function</u> |
|-------------|---|
| | <u>Packaging</u> |
| | Time required to package, count, grade, label and wrap trees. |
| 13-14931 | Conifers |
| 13-14932 | Hardwoods |
| 13-14933 | Shrubs |
| 13-14941 | <u>Bulk Packaging</u> |
| | Preparation of packaging material and actual packaging. |
| 13-14942 | <u>State Park Trees</u> |
| 13-14943 | <u>Seed Storage, Purchase, Collection, and Extraction</u> |
| 13-14944 | <u>Nursery Tree Inventory</u> |
| 13-14945 | <u>Prairie Restoration Project</u> |
| 13-14946 | <u>Inter-Nursery Shipments</u> |
| | Include time spent transporting trees between nurseries. |
| 13-14948 | <u>Seed Orchard Maintenance and Development</u> |
| | <u>Maintenance</u> |
| 13-14954 | <u>Soil</u> |
| | Preparation and application of organic material and fertilizers. Include application of soil fumigants, and maintenance of equipment used in this function. |
| 13-14957 | <u>Equipment</u> |
| | Record time spent on maintenance of equipment. Do Not include time spent in maintaining equipment that is part of the Heavy Equipment Pool or Car Pool. |
| 13-14958 | <u>Buildings and Grounds</u> |
| | Record time spent on maintenance of buildings and grounds. |
| 13-24032 | <u>Nursery Field Coordination</u> |
| | Record time spent performing activities related to statewide nursery operations including consolidation of purchase orders, seedings schedules, inventories, tree order, etc. |

SECTION 1

SECTION 2

SEC. 3

SEC. 4

SEC. 5

| DATE | REASON FOR COMPENSATORY TIME EARNED |
|------|-------------------------------------|
| | |

NURSERIES COST REPORT
FOR THE
WISCONSIN DEPARTMENT OF NATURAL RESOURCES

FISCAL YEAR

1977-1978

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All State Nurseries
Cost To Grow Trees Distributed
1977- 1978

EXHIBIT C
Page of 2

| | | No of M | Total Cost To Grow | Cost Per M | |
|----|-----------------|---------|-----------------------|------------|----|
| 1 | 2-0 Seedlings | | | | 1 |
| 2 | Red Pine | 1537.5 | \$ 12526.32 | \$ 8.15 | 2 |
| 3 | Jack Pine | 195.5 | 1358.28 | 6.95 | 3 |
| 4 | White Pine | 3 | 205 | 683 | 4 |
| 5 | Norway Spruce | 3 | 254 | 846 | 5 |
| 6 | White Spruce | 75.3 | 44232 | 587 | 6 |
| 7 | European Larch | 34.6 | 115598 | 3341 | 7 |
| 8 | | | | | 8 |
| 9 | Total | 1843.5 | \$ 1548749 | \$ 8.40 | 9 |
| 10 | | | | | 10 |
| 11 | 3-0 Seedlings | | | | 11 |
| 12 | Red Pine | 9184.3 | \$ 9088122 | \$ 9.90 | 12 |
| 13 | White Pine | 322.1 | 12852.20 | 3990 | 13 |
| 14 | Norway Spruce | 305.4 | 431579 | 1413 | 14 |
| 15 | White Spruce | 634.4 | 751435 | 1184 | 15 |
| 16 | White Cedar | 199.4 | 274553 | 1377 | 16 |
| 17 | | | | | 17 |
| 18 | Total | 10645.6 | \$ 11830909 | \$ 11.11 | 18 |
| 19 | | | | | 19 |
| 20 | 2-1 Transplants | | | | 20 |
| 21 | White Pine | 270.9 | \$ 1792970 | \$ 66.19 | 21 |
| 22 | | | | | 22 |
| 23 | Total | 270.9 | \$ 1792970 | \$ 66.19 | 23 |
| 24 | | | | | 24 |
| 25 | 2-2 Transplants | | | | 25 |
| 26 | White Spruce | 493.4 | \$ 2342525 | \$ 47.48 | 26 |
| 27 | | | | | 27 |
| 28 | Total | 493.4 | \$ 2342525 | \$ 47.48 | 28 |
| 29 | | | | | 29 |
| 30 | HARDWOODS | | | | 30 |
| 31 | | | | | 31 |
| 32 | 1-0 Seedlings | | | | 32 |
| 33 | Black Walnut | 567.8 | \$ 2104835 | \$ 37.07 | 33 |
| 34 | Red Oak | 73.6 | 208869 | 2833 | 34 |
| 35 | | 641.4 | \$ 2313704 | 3607 | 35 |
| 36 | | | | | 36 |
| 37 | | | | | 37 |
| 38 | | | | | 38 |
| 39 | | | | | 39 |
| 40 | | | | | 40 |

All State Nurseries
Cost To Grow Trees Distributed
1977-1978

EXHIBIT C
Page 2 of 2

| | | 1 | 2 | 3 | 4 |
|----|---------------|---------|-----------------------|------------|----|
| | | No of M | Total Cost To Grow | Cost Per M | |
| 1 | HARDWOODS | | | | 1 |
| 2 | 2-0 Seedlings | | | | 2 |
| 3 | White Oak | 26.4 | \$ 1177.48 | \$ 44.60 | 3 |
| 4 | White Ash | 37.7 | 1105.37 | 29.32 | 4 |
| 5 | Red Oak | 36.2 | 1157.18 | 31.97 | 5 |
| 6 | Basswood | .3 | 1.84 | .613 | 6 |
| 7 | Green Ash | 25.9 | 1207.46 | 46.62 | 7 |
| 8 | | | | | 8 |
| 9 | Total | 126.5 | \$ 4649.33 | \$ 36.75 | 9 |
| 10 | | | | | 10 |
| 11 | 3-0 Seedlings | | | | 11 |
| 12 | Hard Maple | 74.0 | \$ 3694.29 | \$ 49.92 | 12 |
| 13 | | | | | 13 |
| 14 | Total | 74.0 | \$ 3694.29 | \$ 49.92 | 14 |
| 15 | | | | | 15 |
| 16 | Decid Shrub | | | | 16 |
| 17 | | | | | 17 |
| 18 | 1-0 Seedlings | 676.4 | \$ 14272.04 | \$ 21.10 | 18 |
| 19 | | | | | 19 |
| 20 | 2-0 Seedlings | 86.6 | \$ 1576.12 | \$ 18.20 | 20 |
| 21 | | | | | 21 |
| 22 | | | | | 22 |
| 23 | | | | | 23 |
| 24 | | | | | 24 |
| 25 | | | | | 25 |
| 26 | | | | | 26 |
| 27 | | | | | 27 |
| 28 | | | | | 28 |
| 29 | | | | | 29 |
| 30 | | | | | 30 |
| 31 | | | | | 31 |
| 32 | | | | | 32 |
| 33 | | | | | 33 |
| 34 | | | | | 34 |
| 35 | | | | | 35 |
| 36 | | | | | 36 |
| 37 | | | | | 37 |
| 38 | | | | | 38 |
| 39 | | | | | 39 |
| 40 | | | | | 40 |

Hayward Nursery
Cost of Raising Trees On Inventory
1977-1978

SCHEDULE B-3

Page 2 of 3

| | | 1 | 2 | 3 | 4 |
|----|-------------------|------------|---------|--------------|-----------|
| | | No of Beds | No of M | Total Cost | Cost / M |
| 1 | FALL 1974 | | | | |
| 2 | 2-2 Transplants | | | | |
| 3 | White Spruce | 426 | 119 | \$ 11690.28 | \$ 98.24 |
| 4 | | | | | |
| 5 | Total | 426 | 119 | \$ 11690.28 | \$ 98.24 |
| 6 | HARDWOODS | | | | |
| 7 | FALL 1977 | | | | |
| 8 | 1-0 Seedlings | | | | |
| 9 | Red Oak | 244.3 | 65 | \$ 1904.43 | \$ 29.30 |
| 10 | White Ash | 142.4 | 29 | 1062.06 | 36.62 |
| 11 | Hard Maple | 143.2 | 49 | 1152.44 | 23.52 |
| 12 | | | | | |
| 13 | Total | 530.4 | 143 | \$ 4118.93 | \$ 28.80 |
| 14 | | | | | |
| 15 | FALL 1976 | | | | |
| 16 | 2-0 Seedlings | | | | |
| 17 | White Oak | 101.6 | 10 | \$ 1112.79 | \$ 111.28 |
| 18 | Red Oak | 138.6 | 57 | 1572.39 | 27.59 |
| 19 | White Ash | 101.6 | 19 | 1016.47 | 53.50 |
| 20 | Hard Maple | 102.4 | 19 | 1036.46 | 54.55 |
| 21 | | | | | |
| 22 | Total | 444.2 | 105 | \$ 4738.11 | \$ 45.12 |
| 23 | | | | | |
| 24 | FALL 1975 | | | | |
| 25 | 3-0 Seedlings | | | | |
| 26 | Hard Maple | 72 | 24 | \$ 814.29 | \$ 33.93 |
| 27 | | | | | |
| 28 | Total | 72 | 24 | \$ 814.29 | \$ 33.93 |
| 29 | | | | | |
| 30 | | | | | |
| 31 | Total Seedlings | 12153.9 | 14979 | \$ 148622.70 | \$ 9.92 |
| 32 | | | | | |
| 33 | Total Transplants | 1386.3 | 475 | \$ 32800.91 | \$ 69.05 |
| 34 | | | | | |
| 35 | | | | | |
| 36 | | | | | |
| 37 | | | | | |
| 38 | | | | | |
| 39 | | | | | |
| 40 | | | | | |

Harwood Nursery
Cost of Raising Trees On Inventory
1977-1978

SCHEDULE B-3

Page 3 of 3

| | | 1 | 2 | 3 | 4 |
|----|-------------------------|------------|---------|------------|---------|
| | | No of Beds | No of m | Total Cost | Cost/m |
| 1 | Dame Shrubs | | | | |
| 2 | FALL 1977 - Seeded | | | | |
| 3 | Shrubs | 163.2 | | \$ 116584 | |
| 4 | | | | | |
| 5 | Total | 163.2 | | \$ 116584 | |
| 6 | FALL 1976 1-0 Seedlings | | | | |
| 7 | Shrubs | 81.6 | 32.0 | \$ 84274 | \$ 2634 |
| 8 | | | | | |
| 9 | Total | 81.6 | 32.0 | \$ 84274 | \$ 2634 |
| 10 | | | | | |
| 11 | | | | | |
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Hayward Nursery
Cost of Raising Trees On Inventory
 1977-1978

SCHEDULE B-3

Page 1 of 3

| | | 1 | 2 | 3 | 4 |
|----|-----------------|------------|---------|-------------|---------|
| | | No of Beds | No of M | Total Cost | Cost/M |
| 1 | FALL 1977 | | | | |
| 2 | 1-0 Seedlings | | | | |
| 3 | Red Pine | 3574.6 | 4968 | \$ 38952.69 | \$ 784 |
| 4 | White Pine | 220. | 333 | 215488 | 647 |
| 5 | Jack Pine | 24 | 32 | 25063 | 783 |
| 6 | Norway Spruce | 67.2 | 79 | 65012 | 823 |
| 7 | White Spruce | 532.9 | 791 | 531959 | 673 |
| 8 | White Cedar | 66.6 | 23 | 62793 | 2730 |
| 9 | | | | | |
| 10 | Total | 4485.3 | 6226 | \$ 4795584 | \$ 770 |
| 11 | | | | | |
| 12 | FALL 1976 | | | | |
| 13 | 2-0 Seedlings | | | | |
| 14 | Red Pine | 3109.1 | 4725 | \$ 3964768 | \$ 839 |
| 15 | White Pine | 210.6 | 164 | 256288 | 1563 |
| 16 | Jack Pine | 40.8 | 63 | 49728 | 789 |
| 17 | Norway Spruce | 60 | 40 | 78293 | 1957 |
| 18 | White Spruce | 285.6 | 140 | 512577 | 3661 |
| 19 | White Cedar | 60.5 | 11 | 71629 | 6512 |
| 20 | | | | | |
| 21 | Total | 3766.6 | 5143 | \$ 4933283 | \$ 959 |
| 22 | | | | | |
| 23 | FALL 1975 | | | | |
| 24 | 3-0 Seedlings | | | | |
| 25 | Red Pine | 2478.4 | 3016 | \$ 3638765 | \$ 1206 |
| 26 | White Pine | 98 | 90 | 138847 | 1543 |
| 27 | Norway Spruce | 84 | 67 | 116422 | 1738 |
| 28 | White Spruce | 142 | 111 | 187192 | 1686 |
| 29 | White Cedar | 53 | 54 | 85044 | 1575 |
| 30 | | | | | |
| 31 | Total | 2855.4 | 3338 | \$ 4166270 | \$ 1248 |
| 32 | | | | | |
| 33 | FALL 1975 | | | | |
| 34 | 2-1 Transplants | | | | |
| 35 | White Pine | 186.3 | 66 | \$ 401557 | \$ 6084 |
| 36 | White Spruce | 774 | 290 | 1709506 | 5895 |
| 37 | | | | | |
| 38 | Total | 960.3 | 356 | \$ 2111063 | \$ 5930 |
| 39 | | | | | |
| 40 | | | | | |

Driffith Nursery
Cost of Raising Trees on clearing
1977-1978

SCHEDULE B-2

Page 3 of 3

| | | 1 | 2 | 3 | 4 |
|----|---------------------------|------------|---------|------------|----------|
| | | No of Beds | No of M | Total Cost | Cost/m |
| 1 | NAME Shrub | | | | |
| 2 | FALL 1977 - Seeded | | | | |
| 3 | Shrub | 145 | | \$ 1244.04 | |
| 4 | | | | | |
| 5 | Total | 145 | | \$ 1244.04 | |
| 6 | | | | | |
| 7 | FALL 1977 - 1-0 Seedlings | | | | |
| 8 | Shrub | 213 | 162.9 | \$ 1893.00 | \$ 11.62 |
| 9 | | | | | |
| 10 | Total | 213 | 162.9 | \$ 1893.60 | \$ 11.62 |
| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
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Driffith Nursery
Cost of Raising Trees On Inventory
1977-1978

SCHEDULE B-2.

Page 1 of 3

| | | 1 | 2 | 3 | 4 |
|----|-----------------|-----------|---------|------------|----------|
| | | No of Bds | No of M | Total Cost | Cost / M |
| 1 | FALL 1977 | | | | |
| 2 | 1-0 Seedlings | | | | |
| 3 | Red Pine | 2726 | 3305 | \$ 3605145 | \$ 1091 |
| 4 | White Pine | 735 | 1513 | 987183 | 652 |
| 5 | Jack Pine | 39 | 91 | 49751 | 547 |
| 6 | Norway Spruce | 112 | 207 | 146704 | 709 |
| 7 | White Spruce | 448 | 1430 | 566606 | 396 |
| 8 | White Cedar | 112 | 161 | 140768 | 874 |
| 9 | | | | | |
| 10 | Total | 4172 | 6707 | \$ 5496157 | \$ 819 |
| 11 | | | | | |
| 12 | FALL 1976 | | | | |
| 13 | 2-0 Seedlings | | | | |
| 14 | Red Pine | 2695 | 5242 | \$ 4951056 | \$ 944 |
| 15 | White Pine | 778 | 1022 | 1378579 | 1349 |
| 16 | Jack Pine | 41 | 67.6 | 72228 | 1068 |
| 17 | Norway Spruce | 114 | 271.7 | 210957 | 776 |
| 18 | White Spruce | 494 | 2406.6 | 901226 | 374 |
| 19 | White Cedar | 74 | 142.2 | 129628 | 912 |
| 20 | | | | | |
| 21 | Total | 4196 | 9152.1 | \$ 7643674 | \$ 835 |
| 22 | | | | | |
| 23 | FALL 1975 | | | | |
| 24 | 3-0 Seedlings | | | | |
| 25 | Red Pine | 2128 | 2766 | \$ 4109000 | \$ 1486 |
| 26 | White Pine | 261 | 216 | 486673 | 2253 |
| 27 | Norway Spruce | 90 | 177.5 | 181729 | 1024 |
| 28 | White Spruce | 177 | 327.7 | 388962 | 1187 |
| 29 | White Cedar | 90 | 133.5 | 175228 | 1313 |
| 30 | | | | | |
| 31 | Total | 2746 | 3620.7 | \$ 5341592 | \$ 1475 |
| 32 | | | | | |
| 33 | FALL 1975 | | | | |
| 34 | 2-1 Transplants | | | | |
| 35 | White Pine | 1157 | 448.4 | \$ 2406462 | \$ 5367 |
| 36 | White Spruce | 931 | 371.6 | 1632722 | 4394 |
| 37 | | | | | |
| 38 | Total | 2088 | 820.0 | \$ 4039184 | \$ 4926 |
| 39 | | | | | |
| 40 | | | | | |

Driffitts Nursery
Cost of Raising Trees On Inventory
1977-1978

SCHEDULE B-2

Page 2 of 3

| | | 1 | 2 | 3 | 4 |
|----|-------------------|------------|---------|-------------|---------|
| | | No of Buds | No of m | Total Cost | Cost/m |
| 1 | FALL 1974 | | | | |
| 2 | 2-2 Transplants | | | | |
| 3 | White Spruce | 630 | 197.2 | \$ 1816659 | \$ 9212 |
| 4 | | | | | |
| 5 | Total | 630 | 197.2 | \$ 1816659 | \$ 9212 |
| 6 | HARDWOODS | | | | |
| 7 | FALL 1977 SEEDED | | | | |
| 8 | Basswood | 23 | | \$ 47569 | |
| 9 | | | | | |
| 10 | Total | 23 | | \$ 47569 | |
| 11 | | | | | |
| 12 | FALL 1977 | | | | |
| 13 | 1-0 Seedlings | | | | |
| 14 | White Ash | 112 | 182.5 | \$ 221343 | \$ 1213 |
| 15 | Hard Maple | 112 | 40.4 | 222348 | 5504 |
| 16 | Red Oak | 88 | 60.7 | 183627 | 3025 |
| 17 | | | | | |
| 18 | Total | 312 | 283.6 | \$ 627318 | \$ 2212 |
| 19 | FALL 1976 | | | | |
| 20 | 2-0 Seedlings | | | | |
| 21 | Red Oak | 17 | 6.2 | \$ 59392 | \$ 9579 |
| 22 | White Ash | 77 | 25.3 | 174788 | 6909 |
| 23 | Hard Maple | 90 | 36.8 | 189698 | 5155 |
| 24 | | | | | |
| 25 | Total | 184 | 68.3 | \$ 423878 | \$ 6206 |
| 26 | FALL 1975 | | | | |
| 27 | 3-0 Seedlings | | | | |
| 28 | Hard Maple | 90 | 27.3 | \$ 233878 | \$ 8567 |
| 29 | | | | | |
| 30 | Total | 90 | 27.3 | \$ 233878 | \$ 8567 |
| 31 | | | | | |
| 32 | Total Seedlings | 11700 | 19859.0 | \$ 19766497 | \$ 995 |
| 33 | | | | | |
| 34 | Total Transplants | 2718 | 1017.2 | \$ 5855843 | \$ 5757 |
| 35 | | | | | |
| 36 | | | | | |
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Wilson Nursery
Cost of Raising Trees On Inventory
1977-1978

SCHEDULE B-1
Page 2 of 3

| | | 1 | 2 | 3 | 4 |
|----|-------------------|------------|---------|--------------|----------|
| | | No of Beds | No of m | Total Cost | Cost/m |
| 1 | FALL 1975 | | | | |
| 2 | 2-1 Transplants | | | | |
| 3 | White Pine | 528 | 174 | \$ 7928.11 | \$ 45.56 |
| 4 | White Spruce | 352 | 155 | 5037.39 | 32.32 |
| 5 | | | | | |
| 6 | Total | 880 | 329 | \$ 13015.50 | \$ 39.56 |
| 7 | | | | | |
| 8 | FALL 1974 | | | | |
| 9 | 2-2 Transplants | | | | |
| 10 | White Pine | 385 | 146 | \$ 6141.54 | \$ 42.07 |
| 11 | White Spruce | 264 | 121 | 4276.46 | 35.34 |
| 12 | | | | | |
| 13 | Total | 649 | 267 | \$ 10418.00 | \$ 39.02 |
| 14 | | | | | |
| 15 | HARD WOODS | | | | |
| 16 | FALL 1977 | | | | |
| 17 | 1-0 Seedlings | | | | |
| 18 | Black Walnut | 2275 | 670 | \$ 17998.05 | \$ 26.86 |
| 19 | White Oak | 132 | 139 | 775.04 | 5.58 |
| 20 | Hard Maple | 125 | 55 | 797.82 | 14.51 |
| 21 | Red Oak | 138 | 83 | 1145.60 | 13.80 |
| 22 | | | | | |
| 23 | Total | 2670 | 947 | \$ 20716.54 | \$ 21.88 |
| 24 | | | | | |
| 25 | FALL 1976 | | | | |
| 26 | 2-0 Seedlings | | | | |
| 27 | White Oak | 87 | 13 | \$ 1076.69 | \$ 82.82 |
| 28 | Red Oak | 46 | 11 | 452.00 | 41.09 |
| 29 | White Oak | 66 | 16 | 832.35 | 52.02 |
| 30 | Hard Maple | 129 | 42 | 1363.87 | 32.47 |
| 31 | | | | | |
| 32 | Total | 328 | 82 | \$ 3724.91 | \$ 45.43 |
| 33 | | | | | |
| 34 | FALL 1975 | | | | |
| 35 | 3-0 Seedlings | | | | |
| 36 | Hard Maple | 112 | 39 | \$ 1081.38 | \$ 27.73 |
| 37 | | | | | |
| 38 | Total | 112 | 39 | \$ 1081.38 | \$ 27.73 |
| 39 | | | | | |
| 40 | Total Seedlings | 11052 | 12104 | \$ 121176.41 | \$ 10.01 |
| | Total Transplants | 1617 | 635 | 24847.36 | 39.13 |

Wilson Nursery
Cost of Raising Trees On Inventory
1977-1978

SCHEDULE B-1

Page 3 of 3

| | | 1 | | 2 | | 3 | | 4 | |
|----|------------|-----------|--|---------|---|------------|---|----------|--|
| | | No of Bdo | | Nb of m | | Total Cost | | Cost / m | |
| 1 | Name Shrub | | | | | | | | |
| 2 | FALL 1977 | | | | | | | | |
| 3 | 1-0 Shrub | 1205 | | 631.0 | # | 12438.04 | # | 1971 | |
| 4 | | | | | | | | | |
| 5 | FALL 1976 | | | | | | | | |
| 6 | 2-0 Shrub | 768 | | 160.0 | # | 5134.72 | # | 3209 | |
| 7 | | | | | | | | | |
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All State Nurseries
Cost of Raising Trees On Inventory
1977-1978

EXHIBIT B
 Page 3 of 3

| | | 1 | 2 | 3 | 4 |
|----|---------------------|------------|---------|--------------|----------|
| | | No of Beds | No of m | Total Cost | Cost/m |
| 1 | Total Seedlings | 34905.9 | 46942.0 | \$ 467464.03 | \$ 9.96 |
| 2 | | | | | |
| 3 | Total Transplants | 5721.3 | 2127.2 | \$ 116206.70 | \$ 54.63 |
| 4 | | | | | |
| 5 | Dome Shrubs | | | | |
| 6 | | | | | |
| 7 | Seeded Shrubs | 308.2 | | \$ 2409.83 | |
| 8 | | | | | |
| 9 | 1-0 Seedling Shrubs | 1499.6 | 825.9 | 1517378 | \$ 1837 |
| 10 | | | | | |
| 11 | 2-0 Seedling Shrubs | 768.0 | 160.0 | 513472 | \$ 3209 |
| 12 | | | | | |
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Wilson Nursery
Cost of Raising Trees On Inventory
1977-1978

SCHEDULE 8-1

Page 1 of 3

| | | 1 | 2 | 3 | 4 |
|----|-----------------|------------|---------|-------------|---------|
| | | No of Beds | No of M | Total Cost | Cost/M |
| 1 | FALL 1977 | | | | |
| 2 | 1-0 Seedlings | | | | |
| 3 | Red Pine | 1242 | 1705 | \$ 14581.29 | \$ 855 |
| 4 | White Pine | 966 | 1562 | 10143.00 | 649 |
| 5 | Jack Pine | 26 | 14 | 273.99 | 19.57 |
| 6 | Norway Spruce | 126 | 91 | 1287.85 | 14.15 |
| 7 | White Spruce | 276 | 430 | 2746.16 | 639 |
| 8 | White Cedar | 118 | 322 | 1206.48 | 375 |
| 9 | | | | | |
| 10 | Total | 2754 | 4124 | \$ 30238.77 | \$ 733 |
| 11 | | | | | |
| 12 | FALL 1976 | | | | |
| 13 | 2-0 Seedlings | | | | |
| 14 | Red Pine | 1364 | 2016 | \$ 18179.52 | \$ 902 |
| 15 | White Pine | 1132 | 1246 | 14418.14 | 1157 |
| 16 | Jack Pine | 24 | 45 | 309.34 | 687 |
| 17 | Norway Spruce | 110 | 124 | 1429.16 | 1153 |
| 18 | White Spruce | 327 | 1053 | 4030.16 | 383 |
| 19 | White Cedar | 110 | 110 | 1335.57 | 12.14 |
| 20 | | | | | |
| 21 | Total | 3067 | 4594 | \$ 39701.89 | \$ 864 |
| 22 | | | | | |
| 23 | FALL 1975 | | | | |
| 24 | 3-0 Seedlings | | | | |
| 25 | Red Pine | 1150 | 1252 | \$ 14406.58 | \$ 1151 |
| 26 | White Pine | 582 | 593 | 6767.62 | 1141 |
| 27 | Norway Spruce | 80 | 80 | 987.07 | 1234 |
| 28 | White Spruce | 219 | 210 | 2487.17 | 1184 |
| 29 | White Cedar | 90 | 183 | 1064.48 | 582 |
| 30 | | | | | |
| 31 | Total | 2121 | 2318 | \$ 25712.92 | \$ 1109 |
| 32 | | | | | |
| 33 | FALL 1974 | | | | |
| 34 | 1-1 Transplants | | | | |
| 35 | White Pine | 88 | 39 | \$ 14138.6 | \$ 3625 |
| 36 | | | | | |
| 37 | Total | 88 | 39 | \$ 14138.6 | \$ 3625 |
| 38 | | | | | |
| 39 | | | | | |
| 40 | | | | | |

All State Nurseries
Cost of Raising Trees On Nursery
1977-1978

EXHIBIT B

Page 1 of 3

| | | 1 | 2 | 3 | 4 |
|----|-----------------|------------|---------|--------------|---------|
| | | No of Beds | No of m | Total Cost | Cost/m |
| 1 | FALL 1977 | | | | |
| 2 | 1-0 Seedlings | | | | |
| 3 | Red Pine | 7542.6 | 9978 | \$ 89585.43 | \$ 898 |
| 4 | White Pine | 1921 | 3408 | 22169.71 | 651 |
| 5 | Jack Pine | 89 | 137 | 1022.13 | 746 |
| 6 | Norway Spruce | 305.2 | 377 | 3405.01 | 903 |
| 7 | White Spruce | 1256.9 | 2651 | 13731.81 | 518 |
| 8 | White Cedar | 296.6 | 506 | 3242.09 | 641 |
| 9 | | | | | |
| 10 | Total | 11411.3 | 17057 | \$ 133156.18 | \$ 781 |
| 11 | | | | | |
| 12 | FALL 1976 | | | | |
| 13 | 2-0 Seedlings | | | | |
| 14 | Red Pine | 7168.1 | 11983 | \$ 107337.76 | \$ 896 |
| 15 | White Pine | 2120.6 | 2432 | 30766.81 | 1265 |
| 16 | Jack Pine | 105.8 | 175.6 | 1528.90 | 871 |
| 17 | Norway Spruce | 284 | 435.7 | 4321.66 | 992 |
| 18 | White Spruce | 1106.6 | 3599.6 | 18168.19 | 505 |
| 19 | White Cedar | 244.5 | 263.2 | 3348.14 | 1272 |
| 20 | | | | | |
| 21 | Total | 11029.6 | 18889.1 | \$ 165471.46 | \$ 876 |
| 22 | | | | | |
| 23 | FALL 1975 | | | | |
| 24 | 3-0 Seedlings | | | | |
| 25 | Red Pine | 5756.4 | 7034 | \$ 91884.23 | \$ 1306 |
| 26 | White Pine | 941 | 899 | 13022.82 | 1449 |
| 27 | Norway Spruce | 254 | 324.5 | 3963.58 | 1223 |
| 28 | White Spruce | 538 | 648.7 | 8243.71 | 1272 |
| 29 | White Cedar | 233 | 370.5 | 3667.20 | 990 |
| 30 | | | | | |
| 31 | Total | 7722.4 | 9276.7 | \$ 120791.54 | \$ 1302 |
| 32 | | | | | |
| 33 | FALL 1976 | | | | |
| 34 | 1-1 Transplants | | | | |
| 35 | White Pine | 88 | 39 | \$ 1413.86 | \$ 3625 |
| 36 | | | | | |
| 37 | Total | 88 | 39 | \$ 1413.86 | \$ 3625 |
| 38 | | | | | |
| 39 | | | | | |
| 40 | | | | | |

All State Nurseries
Cost of Raising Trees On Inventory
1977-1978

EXHIBIT B

Page 2 of 3

| | | 1 | 2 | 3 | 4 |
|----|------------------|-------------|----------|-------------|----------|
| | | No. of Beds | No. of M | Total Cost | Cost/M |
| 1 | FALL 1975 | | | | |
| 2 | 2-1 Transplants | | | | |
| 3 | White Pine | 1871.3 | 688.4 | \$ 36008.30 | \$ 52.31 |
| 4 | White Spruce | 2057 | 816.6 | 38509.67 | 47.16 |
| 5 | | | | | |
| 6 | Total | 3928.3 | 1505 | \$ 74517.97 | \$ 49.51 |
| 7 | | | | | |
| 8 | FALL 1974 | | | | |
| 9 | 2-2 Transplants | | | | |
| 10 | White Pine | 385 | 146 | \$ 6141.54 | \$ 42.07 |
| 11 | White Spruce | 1320 | 437.2 | 34133.33 | 78.07 |
| 12 | | | | | |
| 13 | Total | 1705 | 583.2 | \$ 40274.87 | \$ 69.06 |
| 14 | | | | | |
| 15 | HARDWOODS | | | | |
| 16 | | | | | |
| 17 | FALL 1977 Seeded | | | | |
| 18 | Basswood | 23 | | \$ 475.69 | |
| 19 | | | | | |
| 20 | Total | 23 | | \$ 475.69 | |
| 21 | | | | | |
| 22 | 1-0 Seedlings | | | | |
| 23 | Black Walnut | 2275 | 670 | \$ 17998.08 | \$ 26.86 |
| 24 | White Ash | 386.4 | 350.5 | 4050.53 | 11.56 |
| 25 | Hard Maple | 380.2 | 144.4 | 4173.74 | 28.90 |
| 26 | Red Oak | 470.8 | 208.7 | 4886.30 | 23.41 |
| 27 | | | | | |
| 28 | Total | 3512.4 | 1373.6 | \$ 31108.65 | \$ 22.65 |
| 29 | FALL 1976 | | | | |
| 30 | 2-0 Seedlings | | | | |
| 31 | White Oak | 188.6 | 23 | \$ 2189.48 | \$ 95.19 |
| 32 | Red Oak | 201.6 | 74.2 | 2618.31 | 35.29 |
| 33 | White Ash | 244.6 | 60.3 | 3592.70 | 59.65 |
| 34 | Hard Maple | 321.4 | 97.8 | 4297.31 | 43.94 |
| 35 | | | | | |
| 36 | Total | 956.2 | 255.3 | \$ 12701.80 | \$ 49.75 |
| 37 | FALL 1975 | | | | |
| 38 | 3-0 Seedlings | | | | |
| 39 | Hard Maple | 274 | 90.3 | \$ 4234.45 | \$ 46.89 |
| 40 | | | | | |
| | Total | 274 | 90.3 | \$ 4234.45 | \$ 46.89 |

Nurseries
Cost of Capital Outlay
 1978-1979

SCHEDULE A-9

| | 1 | 2 | 3 | 4 |
|----|--------------------------|------|---------|---|
| | | COST | | |
| 1 | Wilson Nursery | | | |
| 2 | Water & Cooler Expansion | \$ | 685.00 | |
| 3 | Water Faucet | | 118.52 | |
| 4 | Fuel Pump | | 480.00 | |
| 5 | | | | |
| 6 | Total | \$ | 1283.52 | |
| 7 | | | | |
| 8 | | | | |
| 9 | Haysward Nursery | | | |
| 10 | Time Switch | \$ | 244.32 | |
| 11 | | | | |
| 12 | Total | \$ | 244.32 | |
| 13 | | | | |
| 14 | | | | |
| 15 | Total of Totals | \$ | 1527.84 | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
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Nurseries
Cost of Other Functions
1977-78

SCHEDULE A-7

| | | 1 | 2 | 3 | 4 |
|----|---------------------------|--------------|-----------|-------------|--------------|
| | | Wilson | Driffith | Hayward | Admin |
| | | | | | Total |
| 1 | | | | | |
| 2 | State Park Trees | \$ 13,814.29 | \$ | \$ | \$ 138,142.9 |
| 3 | | | | | |
| 4 | Prairie Restoration Proj. | 7467.68 | | 837.41 | 8305.09 |
| 5 | | | | | |
| 6 | Seed Orchard Maint + Dev | 1267.14 | 288.95 | 1603.90 | 2849.30 |
| 7 | | | | | 6009.29 |
| 8 | Seed Purchase | 16300.65 | 274.17 | 15949.88 | 13267.85 |
| 9 | | | | | 45792.55 |
| 10 | TOTAL | \$ 38849.76 | \$ 563.12 | \$ 18391.19 | \$ 16117.15 |
| 11 | | | | | 73921.22 |
| 12 | | | | | |
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| | 1 | 2 | 3 | 4 |
|----|-------------------------------|---|-----------|---|
| | | | COST | |
| 1 | Field Management | | | |
| 2 | Appraisals | | \$ 104775 | |
| 3 | Land Maintenance | | 21156 | |
| 4 | Investigations | | 17279 | |
| 5 | Administration | | 142941 | |
| 6 | Reports + Record Keeping | | 150444 | |
| 7 | Heavy Equipment Pool | | 23474 | |
| 8 | | | | |
| 9 | Field Management Total | | \$ 460069 | |
| 10 | | | | |
| 11 | Wildlife Management | | | |
| 12 | Acquisition | | \$ 57785 | |
| 13 | Habitat Development | | 45263 | |
| 14 | Habitat Maintenance | | 3966 | |
| 15 | Equipment Maintenance | | 39457 | |
| 16 | Ordered Wildlife Surveys | | 229882 | |
| 17 | Other Informational Services | | 43567 | |
| 18 | Training | | 2868 | |
| 19 | Administration | | 166365 | |
| 20 | Other Work Activities | | 83090 | |
| 21 | Heavy Equipment Pool | | 55572 | |
| 22 | | | | |
| 23 | Wildlife Mgmt. Total | | \$ 727815 | |
| 24 | | | | |
| 25 | Fire Control | | | |
| 26 | Fire Suppression | | \$ 18253 | |
| 27 | Fire Reports + Appraisals | | 7667 | |
| 28 | Maintenance - Bldgs + Grounds | | 11099 | |
| 29 | Informational Services | | 5552 | |
| 30 | Training | | 49301 | |
| 31 | Fire Training | | 110598 | |
| 32 | Administration | | 135911 | |
| 33 | Meetings | | 62696 | |
| 34 | Other Work Activities | | 187652 | |
| 35 | Heavy Equipment Pool | | 149030 | |
| 36 | | | | |
| 37 | Fire Control Total | | \$ 737759 | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |

Nurseries
Cost of Lifting and Bulk Baling Per M
1976-1978

SCHEDULE A-5
 SECTION 1
 Page 2 of 2

| | | 1 | 2 | 3 | 4 |
|----|-------------------------|---------|----------|---------|---------|
| | | Wilson | Thiffier | Hayward | Average |
| 1 | Lifting Costs Per M | | | | |
| 2 | Transplants | | | | |
| 3 | 1976 | \$ 1077 | \$ 1081 | \$ 559 | \$ 950 |
| 4 | 1976-77 | 1389 | 942 | 1066 | 1162 |
| 5 | 1977-78 | 2388 | 1280 | 1055 | 1384 |
| 6 | | | | | |
| 7 | Average | \$ 1246 | \$ 1100 | \$ 759 | \$ 1063 |
| 8 | | | | | |
| 9 | Bulk Baling Costs Per M | | | | |
| 10 | Transplants | | | | |
| 11 | 1976 | \$ 1116 | \$ 403 | \$ 557 | \$ 607 |
| 12 | 1976-77 | 432 | 601 | 743 | 578 |
| 13 | 1977-78 | 1280 | 506 | 499 | 555 |
| 14 | | | | | |
| 15 | Average | \$ 914 | \$ 465 | \$ 579 | \$ 591 |
| 16 | | | | | |
| 17 | Lifting Costs Per M | | | | |
| 18 | Hardwoods | | | | |
| 19 | 1976 | \$ 807 | \$ 813 | \$ 422 | \$ 801 |
| 20 | 1976-77 | 1042 | 705 | 803 | 989 |
| 21 | 1977-78 | 1789 | 962 | 795 | 1628 |
| 22 | | | | | |
| 23 | Average | \$ 1331 | \$ 860 | \$ 769 | \$ 1246 |
| 24 | | | | | |
| 25 | Bulk Baling Costs Per M | | | | |
| 26 | Hardwoods | | | | |
| 27 | 1976 | \$ 697 | \$ 256 | \$ 375 | \$ 608 |
| 28 | 1976-77 | 270 | 378 | 472 | 292 |
| 29 | 1977-78 | 799 | 317 | 312 | 712 |
| 30 | | | | | |
| 31 | Average | \$ 638 | \$ 292 | \$ 363 | \$ 580 |
| 32 | | | | | |
| 33 | | | | | |
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Cost of Soil Maintenance

1977-1978

| | | 1 | 2 | 3 | 4 |
|----|--------------------------|------------|-------------|------------|--------------|
| | | Wilson | Driffith | Hayward | Total Cost |
| 1 | Number Of Beds | 14642.0 | 14799.0 | 13785.0 | 43226.0 |
| 2 | | | | | |
| 3 | Soil Maintenance Costs | \$ 9990.27 | \$ 13835.10 | \$ 7927.33 | \$ 31752.70 |
| 4 | | | | | |
| 5 | Cost/Bed For Soil Mntnce | \$ 68 | \$ 93 | \$ 58 | \$ 73 |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
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| 15 | | | | | |
| 16 | | | | | |
| 17 | Cost of Soil Maintenance | | | | SCHEDULE A-6 |
| 18 | 1976-1978 | | | | SECTION 1 |
| 19 | | | | | |
| 20 | | | | | |
| 21 | | Wilson | Driffith | Hayward | Average |
| 22 | 1976 | \$ 58 | \$ 56 | \$ 30 | \$ 49 |
| 23 | 1976-77 | 83 | 78 | 69 | 77 |
| 24 | 1977-78 | 68 | 93 | 58 | 73 |
| 25 | | | | | |
| 26 | Average | \$ 68 | \$ 74 | \$ 50 | \$ 64 |
| 27 | | | | | |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |
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Cost of Distribution of Bulk Baled Trees

Page 2 of 2

1977-1978

| | | 1 | 2 | 3 | 4 |
|----|----------------------------------|------------|------------|------------|-------------|
| | | Wilson | Thiffith | Hayward | Total Cost |
| 1 | Dwarf Shrub | | | | |
| 2 | | | | | |
| 3 | 1-0 Shrub | | | | |
| 4 | Lifting Costs | \$ 1192329 | | | \$ 1192329 |
| 5 | M Shrub Lifted | 799.3 | | | 799.3 |
| 6 | Cost M/Shrub Lifted | \$ 1492 | | | \$ 1492 |
| 7 | Bulk Baling Costs | \$ 239041 | | | \$ 239041 |
| 8 | M Shrub Bulk Baled | 298.6 | | | 298.6 |
| 9 | Cost M/Shrub Bulk Baled | \$ 801 | | | \$ 801 |
| 10 | | | | | |
| 11 | Cost M/Shrub Lifted + Bulk Baled | \$ 2293 | | | |
| 12 | | | | | |
| 13 | 2-0 Shrub | | | | |
| 14 | Lifting Costs | \$ 135431 | | | \$ 135431 |
| 15 | M Shrub Lifted | 90.8 | | | 90.8 |
| 16 | Cost M/Shrub Lifted | \$ 1492 | | | \$ 1492 |
| 17 | Bulk Baling Costs | \$ 23296 | | | \$ 23296 |
| 18 | M Shrub Bulk Baled | 29.1 | | | 29.1 |
| 19 | Cost M/Shrub Bulk Baled | \$ 801 | | | \$ 801 |
| 20 | | | | | |
| 21 | Cost M/Shrub Lifted + Bulk Baled | \$ 2293 | | | \$ 2293 |
| 22 | | | | | |
| 23 | | | | | |
| 24 | Total Lifting Costs | \$ 5946083 | \$ 6044070 | \$ 4000171 | \$ 15990324 |
| 25 | | | | | |
| 26 | Total Bulk Baling Costs | \$ 1115854 | \$ 1667864 | \$ 1615893 | \$ 4399611 |
| 27 | | | | | |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
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Cost of Distribution of Bulk Baled Trees
1977-1978

Page 2 of 2

| | | 1 | 2 | 3 | 4 |
|----|-----------------------------------|------------|------------|------------|-------------|
| | | Wilson | Griffith | Hayward | Total Cost |
| 1 | Dana Shrub | | | | |
| 2 | | | | | |
| 3 | 1-0 Shrub | | | | |
| 4 | Lifting Costs | \$ 1192329 | | | \$ 1192329 |
| 5 | M Shrub Lifted | 799.3 | | | 799.3 |
| 6 | Cost M/Shrub Lifted | \$ 1492 | | | \$ 1492 |
| 7 | Bulk Baling Costs | \$ 239041 | | | \$ 239041 |
| 8 | M Shrub Bulk Baled | 298.6 | | | 298.6 |
| 9 | Cost M/Shrub Bulk Baled | \$ 801 | | | \$ 801 |
| 10 | | | | | |
| 11 | Cost M/Shrub Lifted & Bulk Baled | \$ 2293 | | | |
| 12 | | | | | |
| 13 | 2-0 Shrub | | | | |
| 14 | Lifting Costs | \$ 135431 | | | \$ 135431 |
| 15 | M Shrub Lifted | 90.8 | | | 90.8 |
| 16 | Cost M/Shrub Lifted | \$ 1492 | | | \$ 1492 |
| 17 | Bulk Baling Costs | \$ 23296 | | | \$ 23296 |
| 18 | M Shrub Bulk Baled | 29.1 | | | 29.1 |
| 19 | Cost M/Shrub Bulk Baled | \$ 801 | | | \$ 801 |
| 20 | | | | | |
| 21 | Costs M/Shrub Lifted & Bulk Baled | \$ 2293 | | | \$ 2293 |
| 22 | | | | | |
| 23 | | | | | |
| 24 | Total Lifting Costs | \$ 5946083 | \$ 6044070 | \$ 4000171 | \$ 15990324 |
| 25 | | | | | |
| 26 | Total Bulk Baling Costs | \$ 1115854 | \$ 1667864 | \$ 1615893 | \$ 4399611 |
| 27 | | | | | |
| 28 | | | | | |
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Nurseries
Cost of Lifting And Packaging Trees Per M
1976-1978

SCHEDULE A4
SECTION 1
Page 2 of 2

| | | 1 | 2 | 3 | 4 |
|----|-----------------------|----------|----------|----------|----------|
| | | Wilson | Diffin | Hayward | Average |
| 1 | Lifting Costs Per M | | | | |
| 2 | Transplants | | | | |
| 3 | 1976 | \$ 10 77 | \$ 10 81 | \$ 5 59 | \$ 9 50 |
| 4 | 1976-77 | 13 89 | 9 42 | 10 66 | 11 62 |
| 5 | 1977-78 | 23 88 | 12 30 | 10 55 | 13 84 |
| 6 | | | | | |
| 7 | Average | \$ 12 46 | \$ 11 00 | \$ 7 59 | \$ 10 63 |
| 8 | | | | | |
| 9 | Packaging Costs Per M | | | | |
| 10 | Transplants | | | | |
| 11 | 1976 | \$ 30 30 | \$ 30 78 | \$ 21 38 | \$ 29 11 |
| 12 | 1976-77 | 46 81 | 27 13 | 28 38 | 33 99 |
| 13 | 1977-78 | 42 26 | 36 11 | 29 38 | 36 96 |
| 14 | | | | | |
| 15 | Average | \$ 34 58 | \$ 30 57 | \$ 24 22 | \$ 31 10 |
| 16 | | | | | |
| 17 | Lifting Costs Per M | | | | |
| 18 | Hardwoods | | | | |
| 19 | 1976 | \$ 8 07 | \$ 8 13 | \$ 4 22 | \$ 8 01 |
| 20 | 1976-77 | 10 42 | 7 05 | 8 03 | 9 89 |
| 21 | 1977-78 | 17 89 | 9 62 | 7 95 | 16 28 |
| 22 | | | | | |
| 23 | Average | \$ 13 31 | \$ 8 60 | \$ 7 69 | \$ 12 46 |
| 24 | | | | | |
| 25 | Packaging Costs Per M | | | | |
| 26 | Hardwoods | | | | |
| 27 | 1976 | \$ 18 95 | \$ 19 20 | \$ 13 38 | \$ 18 53 |
| 28 | 1976-77 | 29 28 | 16 97 | 17 73 | 24 93 |
| 29 | 1977-78 | 26 41 | 22 53 | 18 36 | 24 63 |
| 30 | | | | | |
| 31 | Average | \$ 24 75 | \$ 20 23 | \$ 17 18 | \$ 22 93 |
| 32 | | | | | |
| 33 | | | | | |
| 34 | | | | | |
| 35 | | | | | |
| 36 | | | | | |
| 37 | | | | | |
| 38 | | | | | |
| 39 | | | | | |
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Cost of Distribution of Bulk Baled Trees
1977-1978

Page 1 of 2

| | | 1 | 2 | 3 | 4 |
|----|------------------------------------|-------------|-------------|-------------|--------------|
| | | Wilson | Thurpitt | Hayward | Total Cost |
| 1 | 2-0 Seedlings | | | | |
| 2 | Lifting Costs | \$ 5048.23 | \$ 7941.91 | \$ 2536.11 | \$ 15526.25 |
| 3 | M Trees Lifted | 423 | 1242 | 481 | 2146 |
| 4 | Cost M/Trees Lifted | \$ 1193 | \$ 639 | \$ 527 | \$ 723 |
| 5 | Bulk Baling Costs | \$ 9443.6 | \$ 1519.42 | \$ 701.30 | \$ 3168.08 |
| 6 | M Trees Bulk Baled | 148 | 601 | 281 | 1030 |
| 7 | Cost M/Trees Bulk Baled | \$ 640 | \$ 253 | \$ 250 | \$ 308 |
| 8 | | | | | |
| 9 | Cost M/Trees Lifted and Bulk Baled | \$ 1833 | \$ 892 | \$ 777 | \$ 1031 |
| 10 | | | | | |
| 11 | 3-0 Seedlings | | | | |
| 12 | Lifting Costs | \$ 25847.62 | \$ 46648.13 | \$ 34321.47 | \$ 106817.22 |
| 13 | M Trees Lifted | 1444 | 4864 | 4337 | 10645 |
| 14 | Cost M/Trees Lifted | \$ 1790 | \$ 959 | \$ 791 | \$ 1003 |
| 15 | Bulk Baling Costs | \$ 57343.8 | \$ 12934.29 | \$ 14378.22 | \$ 33046.89 |
| 16 | M Trees Bulk Baled | 716 | 4090 | 4611 | 9417 |
| 17 | Cost M/Trees Bulk Baled | \$ 801 | \$ 316 | \$ 312 | \$ 351 |
| 18 | | | | | |
| 19 | Cost M/Trees Lifted and Bulk Baled | \$ 2591 | \$ 1275 | \$ 1103 | \$ 1354 |
| 20 | | | | | |
| 21 | Transplants | | | | |
| 22 | Lifting Costs | \$ 2889.80 | \$ 5119.33 | \$ 2564.11 | \$ 10573.24 |
| 23 | M Trees Lifted | 121 | 400 | 243 | 764 |
| 24 | Cost M/Trees Lifted | \$ 2388 | \$ 1280 | \$ 1055 | \$ 1324 |
| 25 | Bulk Baling Costs | \$ 5757.8 | \$ 2161.55 | \$ 1032.55 | \$ 3769.88 |
| 26 | M Trees Bulk Baled | 45 | 427 | 207 | 679 |
| 27 | Cost M/Trees Bulk Baled | \$ 1280 | \$ 506 | \$ 499 | \$ 555 |
| 28 | | | | | |
| 29 | Cost M/Trees Lifted and Bulk Baled | \$ 3668 | \$ 1786 | \$ 1554 | \$ 1939 |
| 30 | | | | | |
| 31 | Hardwoods | | | | |
| 32 | Lifting Costs | \$ 12397.58 | \$ 731.33 | \$ 580.02 | \$ 13708.93 |
| 33 | M Trees Lifted | 693 | 76 | 73 | 842 |
| 34 | Cost M/Trees Lifted | \$ 1789 | \$ 962 | \$ 795 | \$ 1628 |
| 35 | Bulk Baling Costs | \$ 1277.65 | \$ 633.8 | \$ 468.6 | \$ 1387.89 |
| 36 | M Trees Bulk Baled | 160 | 20 | 15 | 195 |
| 37 | Cost M/Trees Bulk Baled | \$ 799 | \$ 317 | \$ 312 | \$ 712 |
| 38 | Cost M/Trees Lifted and Bulk Baled | \$ 2588 | \$ 1279 | \$ 1107 | \$ 2340 |
| 39 | | | | | |
| 40 | | | | | |

Nurseries
Cost of Distribution of Packaged Trees
1977-1978

SCHEDULE A-4

Page 2 of 2

| | | 1 | 2 | 3 | 4 |
|----|----------------------------------|------------|------------|------------|-------------|
| | | Wilson | Driffith | Hayward | Total Cost |
| 1 | Name Shrub | | | | |
| 2 | | | | | |
| 3 | 1-0 Shrub | | | | |
| 4 | Lifting Costs | \$ 1192329 | | | \$ 1192329 |
| 5 | M Shrub Lifted | 799.3 | | | 799.3 |
| 6 | Cost M/Shrub Lifted | \$ 14.92 | | | \$ 14.92 |
| 7 | Package Costs | \$ 997924 | \$ 448981 | \$ 141869 | \$ 1588774 |
| 8 | M Shrub Packaged | 377.7 | 199.3 | 77.2 | 654.2 |
| 9 | Cost M/Shrub Packaged | \$ 26.42 | \$ 22.53 | \$ 18.38 | \$ 24.29 |
| 10 | | | | | |
| 11 | Cost M/Shrub Lifted & Packaged | \$ 4134 | \$ 22.53 | \$ 18.38 | \$ 39.21 |
| 12 | | | | | |
| 13 | | | | | |
| 14 | 2-0 Shrub | | | | |
| 15 | Lifting Costs | \$ 135431 | | | \$ 135431 |
| 16 | M Shrub Lifted | 90.8 | | | 90.8 |
| 17 | Cost M/Shrub Lifted | \$ 14.92 | | | \$ 14.92 |
| 18 | Package Costs | \$ 151891 | \$ 48119 | \$ 11288 | \$ 211298 |
| 19 | M Shrub Packaged | 57.5 | 21.3 | 6.2 | 85.0 |
| 20 | Cost M/Shrub Packaged | \$ 26.42 | \$ 22.59 | \$ 18.21 | \$ 24.36 |
| 21 | | | | | |
| 22 | Cost M/Shrub Lifted and Packaged | \$ 4134 | \$ 22.59 | \$ 18.21 | \$ 39.78 |
| 23 | | | | | |
| 24 | | | | | |
| 25 | 3-0 Shrub | | | | |
| 26 | Lifting Costs | | | | |
| 27 | M Shrub Lifted | | | | |
| 28 | Cost M/Shrub Lifted | | | | |
| 29 | Package Costs | | | | |
| 30 | M Shrub Packaged | | | | |
| 31 | Cost M/Shrub Packaged | | | | |
| 32 | | | | | |
| 33 | Cost M/Shrub Lifted and Packaged | | | | |
| 34 | | | | | |
| 35 | | | | | |
| 36 | Total Lifting Costs | \$ 5946083 | \$ 6044070 | \$ 4000171 | \$ 15990324 |
| 37 | | | | | |
| 38 | Total Packaging Costs | \$ 5628072 | \$ 4300180 | \$ 2121281 | \$ 12049533 |
| 39 | | | | | |
| 40 | | | | | |

Nurseries
Cost of Lifting and Packaging Trees Per M
1976 - 1978

SCHEDULE A-4

SECTION 1

Page 1 of 2

| | | 1 | 2 | 3 | 4 |
|----|-----------------------|---------|----------|---------|---------|
| | | Wilson | Thiffert | Hayward | Average |
| 1 | Lifting Costs Per M | | | | |
| 2 | 2-0 Seedlings | | | | |
| 3 | 1976 | \$ 541 | \$ 540 | \$ 280 | \$ 454 |
| 4 | 1976-77 | 695 | 471 | 533 | 519 |
| 5 | 1977-78 | 1193 | 639 | 527 | 723 |
| 6 | | | | | |
| 7 | Average | \$ 968 | \$ 572 | \$ 457 | \$ 603 |
| 8 | | | | | |
| 9 | Packaging Costs Per M | | | | |
| 10 | 2-0 Seedlings | | | | |
| 11 | 1976 | \$ 1507 | \$ 1537 | \$ 1071 | \$ 1427 |
| 12 | 1976-77 | 2337 | 1358 | 1420 | 1638 |
| 13 | 1977-78 | 2113 | 1801 | 1470 | 1807 |
| 14 | | | | | |
| 15 | Average | \$ 2102 | \$ 1643 | \$ 1413 | \$ 1717 |
| 16 | | | | | |
| 17 | Lifting Costs Per M | | | | |
| 18 | 3-0 Seedlings | | | | |
| 19 | 1976 | \$ 808 | \$ 810 | \$ 420 | \$ 611 |
| 20 | 1976-77 | 1042 | 706 | 800 | 812 |
| 21 | 1977-78 | 1790 | 959 | 791 | 1003 |
| 22 | | | | | |
| 23 | Average | \$ 1111 | \$ 821 | \$ 618 | \$ 799 |
| 24 | | | | | |
| 25 | Packaging Costs Per M | | | | |
| 26 | 3-0 Seedlings | | | | |
| 27 | 1976 | \$ 1892 | \$ 1923 | \$ 1337 | \$ 1756 |
| 28 | 1976-77 | 2924 | 1695 | 1773 | 2007 |
| 29 | 1977-78 | 2641 | 2255 | 1837 | 2258 |
| 30 | | | | | |
| 31 | Average | \$ 2397 | \$ 1887 | \$ 1625 | \$ 1964 |
| 32 | | | | | |
| 33 | | | | | |
| 34 | | | | | |
| 35 | | | | | |
| 36 | | | | | |
| 37 | | | | | |
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Nurseries
Cost of Transplanting (Per Thousand)
1977-78

SCHEDULE A-3

| | | 1 | 2 | 3 | 4 |
|----|--------------------------------------|------------|-------------|-------------|-------------|
| | | Wilson | Driffith | Hayward | Total |
| 1 | No of M Transplants | 419 | 876.9 | 403 | 1698.9 |
| 2 | | | | | |
| 3 | Cost of Transplanting | \$ 9358.17 | \$ 23405.20 | \$ 12906.37 | \$ 45669.74 |
| 4 | | | | | |
| 5 | Cost Per M To Transplant | \$ 22.33 | \$ 26.69 | \$ 32.03 | \$ 26.88 |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | | | | | |
| 16 | | | | | |
| 17 | Cost of Transplanting (Per Thousand) | | | SCHEDULE | A-3 |
| 18 | 1976-1978 | | | SECTION | 1 |
| 19 | | | | | |
| 20 | | | | | |
| 21 | | Wilson | Driffith | Hayward | Total |
| 22 | 1976 | \$ 15.86 | \$ 25.31 | \$ 28.68 | \$ 23.22 |
| 23 | 1976-77 | 15.93 | 28.07 | 35.63 | 26.13 |
| 24 | 1977-78 | 22.33 | 26.69 | 32.03 | 26.88 |
| 25 | | | | | |
| 26 | Average | \$ 18.46 | \$ 26.69 | \$ 32.09 | \$ 25.67 |
| 27 | | | | | |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |
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| 36 | | | | | |
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| 38 | | | | | |
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| 40 | | | | | |

Cost of Distribution of Packaged Trees

Page 1 of 2

1977-1978

| | | 1 | | 2 | | 3 | | 4 | |
|----|----------------------------------|--------|----------|--------|----------|---------|----------|------------|-----------|
| | | Wilson | | Thrift | | Hayward | | Total Cost | |
| 1 | 2-0 Seedlings | | | | | | | | |
| 2 | Lifting Costs | \$ | 5048.23 | \$ | 7941.91 | \$ | 2536.11 | \$ | 15526.25 |
| 3 | M Trees Lifted | | 423 | | 1242 | | 481 | | 2146 |
| 4 | Cost M/Trees Lifted | \$ | 1193 | \$ | 639 | \$ | 527 | \$ | 723 |
| 5 | Package Costs | \$ | 6128.97 | \$ | 6157.86 | \$ | 3763.15 | \$ | 16049.98 |
| 6 | M Trees Packaged | | 290 | | 342 | | 256 | | 888 |
| 7 | Cost M/Trees Packaged | \$ | 2113 | \$ | 1801 | \$ | 1470 | \$ | 1807 |
| 8 | | | | | | | | | |
| 9 | Cost M/Trees Lifted and Packaged | \$ | 3306 | \$ | 2440 | \$ | 1997 | \$ | 2530 |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | 3-0 Seedlings | | | | | | | | |
| 13 | Lifting Costs | \$ | 25847.62 | \$ | 46648.13 | \$ | 34321.47 | \$ | 106817.22 |
| 14 | M Trees Lifted | | 1444 | | 4864 | | 4337 | | 10645 |
| 15 | Cost M/Trees Lifted | \$ | 1790 | \$ | 959 | \$ | 791 | \$ | 1003 |
| 16 | Package Costs | \$ | 19568.81 | \$ | 24214.31 | \$ | 12197.37 | \$ | 55980.49 |
| 17 | M Trees Packaged | | 741 | | 1074 | | 664 | | 2479 |
| 18 | Cost M/Trees Packaged | \$ | 2641 | \$ | 2255 | \$ | 1837 | \$ | 2258 |
| 19 | | | | | | | | | |
| 20 | Cost M/Trees Lifted and Packaged | \$ | 4431 | \$ | 3214 | \$ | 2628 | \$ | 3261 |
| 21 | | | | | | | | | |
| 22 | | | | | | | | | |
| 23 | Transplants | | | | | | | | |
| 24 | Lifting Costs | \$ | 2889.80 | \$ | 5119.33 | \$ | 2564.11 | \$ | 10573.24 |
| 25 | M Trees Lifted | | 121 | | 400 | | 243 | | 764 |
| 26 | Cost M/Trees Lifted | \$ | 2388 | \$ | 1280 | \$ | 1055 | \$ | 1384 |
| 27 | Package Costs | \$ | 4479.94 | \$ | 4188.38 | \$ | 1792.48 | \$ | 10460.80 |
| 28 | M Trees Packaged | | 106 | | 116 | | 61 | | 283 |
| 29 | Cost M/Trees Packaged | \$ | 4226 | \$ | 3611 | \$ | 2938 | \$ | 3696 |
| 30 | | | | | | | | | |
| 31 | Cost M/Trees Lifted and Packaged | \$ | 6614 | \$ | 4891 | \$ | 3993 | \$ | 5080 |
| 32 | | | | | | | | | |
| 33 | Hardwoods | | | | | | | | |
| 34 | Lifting Costs | \$ | 12397.58 | \$ | 7313.33 | \$ | 5800.02 | \$ | 13708.93 |
| 35 | M Trees Lifted | | 693 | | 76 | | 73 | | 842 |
| 36 | Cost M/Trees Lifted | \$ | 1789 | \$ | 962 | \$ | 795 | \$ | 1628 |
| 37 | Package Costs | \$ | 14604.85 | \$ | 3470.25 | \$ | 1928.24 | \$ | 20003.34 |
| 38 | M Trees Packaged | | 553 | | 154 | | 105 | | 812 |
| 39 | Cost M/Trees Packaged | \$ | 2641 | \$ | 2253 | \$ | 1836 | \$ | 2463 |
| 40 | | | | | | | | | |
| | Cost M/Trees Lifted and Packaged | \$ | 4430 | \$ | 3215 | \$ | 2631 | \$ | 4091 |

Cost of Care of Nursery Stock

1977-78

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----|------------------------|-------------|-------------|-------------|---|--------------|---|---|
| | | Williams | Thiffiter | Hayward | | Total | | |
| 1 | 1-0 Seedlings | | | | | | | |
| 2 | Cost of Care of Stock | \$ 9241.66 | \$ 19861.41 | \$ 9864.59 | | \$ 38967.66 | | |
| 3 | No. of Beds Under Care | 5424.0 | 4434.0 | 5015.7 | | 14923.7 | | |
| 4 | Cost / Bed Under Care | \$ 1.70 | \$ 4.43 | \$ 1.95 | | \$ 2.61 | | |
| 5 | No. of M Under Care | 5071.0 | 6991.0 | 6369.0 | | 18431.0 | | |
| 6 | Cost / M Under Care | \$ 1.82 | \$ 2.84 | \$ 1.54 | | \$ 2.11 | | |
| 7 | | | | | | | | |
| 8 | 2-0 Seedlings | | | | | | | |
| 9 | Cost of Care of Stock | \$ 1430.43 | \$ 19387.19 | \$ 8231.33 | | \$ 34948.95 | | |
| 10 | No. of Beds Under Care | 3395.0 | 4380.0 | 4210.8 | | 11985.8 | | |
| 11 | Cost / Bed Under Care | \$ 2.19 | \$ 4.40 | \$ 1.95 | | \$ 2.82 | | |
| 12 | No. of M Under Care | 4671.0 | 9221.0 | 5248.0 | | 19145.0 | | |
| 13 | Cost / M Under Care | \$ 1.59 | \$ 2.09 | \$ 1.57 | | \$ 1.83 | | |
| 14 | | | | | | | | |
| 15 | 3-0 Seedlings | | | | | | | |
| 16 | Cost of Care of Stock | \$ 5015.71 | \$ 12438.48 | \$ 5739.20 | | \$ 23243.65 | | |
| 17 | No. of Beds Under Care | 2233.0 | 2836.0 | 2921.4 | | 7990.4 | | |
| 18 | Cost / Bed Under Care | \$ 2.25 | \$ 4.40 | \$ 1.96 | | \$ 2.91 | | |
| 19 | No. of M Under Care | 2357.0 | 3642.0 | 3362.0 | | 9361.0 | | |
| 20 | Cost / M Under Care | \$ 2.13 | \$ 3.42 | \$ 1.70 | | \$ 2.42 | | |
| 21 | | | | | | | | |
| 22 | 2-1 Transplants | | | | | | | |
| 23 | Cost of Care of Stock | \$ 11259.21 | \$ 48206.39 | \$ 16582.01 | | \$ 77347.61 | | |
| 24 | No. of Beds Under Care | 968.0 | 2682.0 | 960.3 | | 4610.3 | | |
| 25 | Cost / Bed Under Care | \$ 13.0 | \$ 23.1 | \$ 17.3 | | \$ 19.3 | | |
| 26 | No. of M Under Care | 368.0 | 820.0 | 356.0 | | 1544.0 | | |
| 27 | Cost / M Under Care | \$ 24.2 | \$ 5.88 | \$ 4.66 | | \$ 50.1 | | |
| 28 | 2-2 Transplants | | | | | | | |
| 29 | Cost of Care of Stock | \$ 8143.8 | \$ 14545.2 | \$ 7355.4 | | \$ 30344.4 | | |
| 30 | No. of Beds Under Care | 649.0 | 630.0 | 426.0 | | 1705.0 | | |
| 31 | Cost / Bed Under Care | \$ 13.0 | \$ 23.1 | \$ 17.3 | | \$ 19.3 | | |
| 32 | No. of M Under Care | 267.0 | 197.0 | 119.0 | | 583.0 | | |
| 33 | Cost / M Under Care | \$ 31.6 | \$ 7.38 | \$ 6.18 | | \$ 52.0 | | |
| 34 | | | | | | | | |
| 35 | None Shrub | | | | | | | |
| 36 | Cost of Care of Stock | \$ 6206.26 | \$ 7593.3 | \$ 4808.7 | | \$ 18608.26 | | |
| 37 | No. of Beds Under Care | 1973.0 | 213.0 | 81.6 | | 2267.6 | | |
| 38 | Cost / Bed Under Care | \$ 3.15 | \$ 35.6 | \$ 5.89 | | \$ 32.8 | | |
| 39 | No. of M Under Care | 791.0 | 163.0 | 32.0 | | 986.0 | | |
| 40 | Cost / M Under Care | \$ 7.85 | \$ 4.66 | \$ 15.63 | | \$ 17.55 | | |
| | TOTAL | \$ 64991.71 | \$ 58671.32 | \$ 26649.44 | | \$ 115312.67 | | |

Cost of Care (Per Thousand)

1976 - 1978

SCHEDULE A-2
SECTION 1

| | | 1 | 2 | 3 | 4 |
|----|-----------------|--------|---------|---------|--------|
| | | Wilson | Juffith | Hayward | Total |
| 1 | 2-0 Seedlings | | | | |
| 2 | 1976 | \$ 268 | \$ 250 | \$ 215 | \$ 241 |
| 3 | 1976-77 | 188 | 245 | 317 | 251 |
| 4 | 1977-78 | 159 | 209 | 157 | 183 |
| 5 | | | | | |
| 6 | Average | \$ 197 | \$ 232 | \$ 223 | \$ 221 |
| 7 | | | | | |
| 8 | | | | | |
| 9 | 2-1 Transplants | | | | |
| 10 | 1976 | \$ 544 | \$ 679 | \$ 1003 | \$ 766 |
| 11 | 1976-77 | 591 | 993 | 1231 | 920 |
| 12 | 1977-78 | 342 | 588 | 466 | 501 |
| 13 | | | | | |
| 14 | Average | \$ 484 | 712 | 811 | 666 |
| 15 | | | | | |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | | | |
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| 34 | | | | | |
| 35 | | | | | |
| 36 | | | | | |
| 37 | | | | | |
| 38 | | | | | |
| 39 | | | | | |
| 40 | | | | | |

Expenditure By Function

1977-78

[illegible]

SCHEDULE A-1

[illegible]

Nurseries

TABLE I

Average Cost Per M For Packaged Trees Distributed
1976 - 1978

| Prepared By | Initials | Date |
|-------------|----------|------|
| Approved By | | |

| | | (1) | (2) | (3) | (4) | (5) |
|----|---------------|----------------------|---------------------|----------------------------------|------------------------|---------------------------|
| | | Cost / m To Throw | Cost / m To Lift | Cost / m To Throw And Lift | Cost / m To Package | Cost / m Packaged Tree |
| 1 | 2-0 Seedlings | | | | | |
| 2 | 1976 | \$ 678 | \$ 454 | \$ 1132 | \$ 1427 | \$ 2559 |
| 3 | 1976-77 | 773 | 519 | 1292 | 1632 | 2930 |
| 4 | 1977-78 | 840 | 723 | 1563 | 1807 | 3370 |
| 5 | | | | | | |
| 6 | Average | \$ 780 | \$ 603 | \$ 1383 | \$ 1717 | \$ 3100 |
| 7 | | | | | | |
| 8 | 3-0 Seedlings | | | | | |
| 9 | 1976 | \$ 842 | \$ 611 | \$ 1453 | \$ 1756 | \$ 3209 |
| 10 | 1976-77 | 1190 | 812 | 2002 | 2007 | 4009 |
| 11 | 1977-78 | 1111 | 1003 | 2114 | 2258 | 4372 |
| 12 | | | | | | |
| 13 | Average | \$ 1044 | \$ 799 | \$ 1843 | \$ 1964 | \$ 3807 |
| 14 | | | | | | |
| 15 | Transplants | | | | | |
| 16 | 1976 | \$ 3079 | \$ 946 | \$ 4025 | \$ 2911 | \$ 6936 |
| 17 | 1976-77 | 3854 | 1162 | 5016 | 3399 | 8415 |
| 18 | 1977-78 | 5411 | 1384 | 6795 | 3696 | 10491 |
| 19 | | | | | | |
| 20 | Average | \$ 3621 | \$ 1063 | \$ 4684 | \$ 3110 | \$ 7794 |
| 21 | | | | | | |
| 22 | Hardwoods | | | | | |
| 23 | 1976 | \$ 5614 | \$ 801 | \$ 6415 | \$ 1853 | \$ 8268 |
| 24 | 1976-77 | 6963 | 989 | 7952 | 2493 | 10445 |
| 25 | 1977-78 | 3739 | 1628 | 5367 | 2463 | 7830 |
| 26 | | | | | | |
| 27 | Average | \$ 4980 | \$ 1246 | \$ 6226 | \$ 2293 | \$ 8519 |
| 28 | | | | | | |
| 29 | Native Shrubs | | | | | |
| 30 | 1976 | \$ 1352 | \$ 673 | \$ 2025 | \$ 1868 | \$ 3892 |
| 31 | 1976-77 | 2419 | 868 | 3287 | 2457 | 5744 |
| 32 | 1977-78 | 2077 | 1492 | 3569 | 2436 | 6005 |
| 33 | | | | | | |
| 34 | Average | \$ 1898 | \$ 996 | \$ 2894 | \$ 2233 | \$ 5127 |
| 35 | | | | | | |
| 36 | | | | | | |
| 37 | | | | | | |
| 38 | | | | | | |
| 39 | | | | | | |
| 40 | | | | | | |

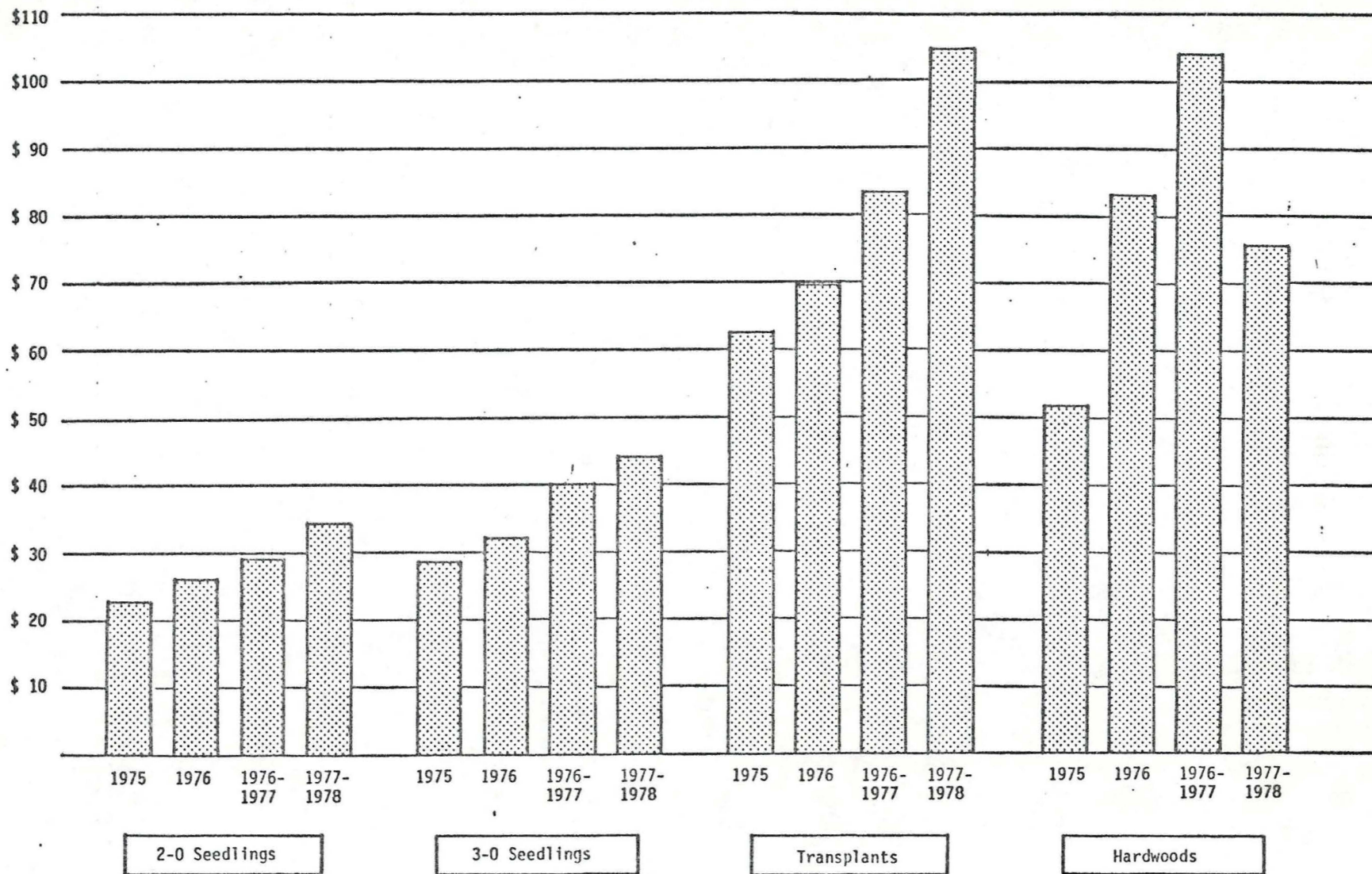
Average Cost Per M For Bulk Baled Treco Distributed

| | | |
|-------------|----------|------|
| | Initials | Date |
| Prepared By | | |
| Approved By | | |

| | | (1) | (2) | (3) | (4) | (5) |
|----|---------------|--------------------|-------------------|--------------------------------|---------------------------|-------------------------------|
| | | Cost/M To Throw | Cost/M To Lift | Cost/M To Throw And Lift | Cost/M To Bulk Bale | Cost/M Bulk Baled Treco |
| 1 | 2-0 Seedlings | | | | | |
| 2 | 1976 | \$ 678 | \$ 454 | \$ 1132 | \$ 279 | \$ 1411 |
| 3 | 1976-77 | 773 | 519 | 1292 | 319 | 1611 |
| 4 | 1977-78 | 840 | 723 | 1563 | 308 | 1871 |
| 5 | | | | | | |
| 6 | Average | \$ 780 | \$ 603 | \$ 1383 | \$ 302 | \$ 1685 |
| 7 | | | | | | |
| 8 | 3-0 Seedlings | | | | | |
| 9 | 1976 | \$ 842 | \$ 611 | \$ 1453 | \$ 363 | \$ 1821 |
| 10 | 1976-77 | 1190 | 812 | 2002 | 381 | 2383 |
| 11 | 1977-78 | 1111 | 1003 | 2114 | 351 | 2465 |
| 12 | | | | | | |
| 13 | Average | \$ 1044 | \$ 799 | \$ 1843 | \$ 366 | \$ 2209 |
| 14 | | | | | | |
| 15 | Transplants | | | | | |
| 16 | 1976 | \$ 3079 | \$ 946 | \$ 4025 | \$ 607 | \$ 4632 |
| 17 | 1976-77 | 3854 | 1162 | 5016 | 578 | 5594 |
| 18 | 1977-78 | 5411 | 1384 | 6795 | 555 | 7350 |
| 19 | | | | | | |
| 20 | Average | \$ 3621 | \$ 1063 | \$ 4684 | \$ 591 | \$ 5275 |
| 21 | | | | | | |
| 22 | Hardwoods | | | | | |
| 23 | 1976 | \$ 5614 | \$ 801 | \$ 6415 | \$ 608 | \$ 7023 |
| 24 | 1976-77 | 6963 | 989 | 7952 | 292 | 8244 |
| 25 | 1977-78 | 3739 | 1628 | 5367 | 712 | 6079 |
| 26 | | | | | | |
| 27 | Average | \$ 4980 | \$ 1246 | \$ 6226 | \$ 580 | \$ 6806 |
| 28 | | | | | | |
| 29 | | | | | | |
| 30 | | | | | | |
| 31 | | | | | | |
| 32 | | | | | | |
| 33 | | | | | | |
| 34 | | | | | | |
| 35 | | | | | | |
| 36 | | | | | | |
| 37 | | | | | | |
| 38 | | | | | | |
| 39 | | | | | | |
| 40 | | | | | | |

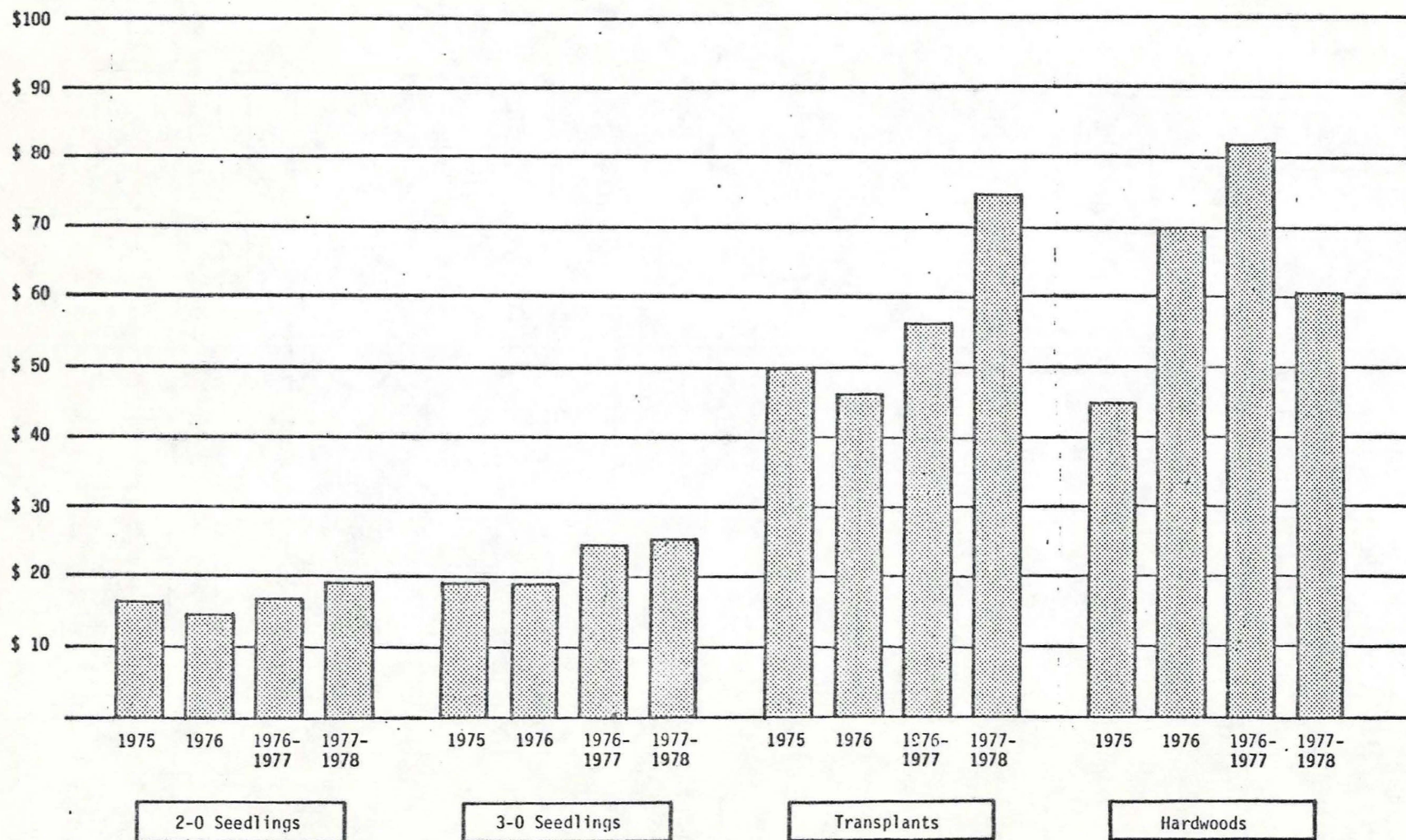
NURSERIES
COST OF PRODUCTION AND DISTRIBUTION
(PER 1,000) OF PACKAGED TREES
1975-1978

CHART II



NURSERIES
COST OF PRODUCTION AND DISTRIBUTION
(PER 1,000) OF BULK BALED TREES
1975-1978

CHART III



INTRODUCTION

Expenditures By Function:

| | | |
|------------|--------------|--------|
| Operations | \$760,336.32 | 100.0% |
|------------|--------------|--------|

Expenditures By Fund:

| | | |
|--------------------|--------------|--------|
| Segregated: | | |
| Forestry Fund | \$588,482.74 | 77.4% |
| Reforestation Fund | 171,853.58 | 22.6% |
| Total | \$760,336.32 | 100.0% |

Expenditures By Line:

| | <u>Salary</u> | <u>Fringe Benefits</u> | <u>Supplies And Services</u> | <u>Permanent Property</u> | <u>Total</u> |
|--------------------|---------------|------------------------|------------------------------|---------------------------|--------------|
| Forestry Fund | \$361,089.92 | \$ 80,841.24 | \$133,152.02 | \$ 13,399.56 | \$588,482.74 |
| Reforestation Fund | 96,300.00 | 23,900.00 | 50,953.58 | 700.00 | 171,853.58 |
| Total By Line | \$457,389.92 | \$104,741.24 | \$184,105.60 | \$ 14,099.56 | \$760,336.32 |
| Percent By Line | 60.1% | 13.8% | 24.2% | 1.9% | 100.0% |

The age class of state nursery stock is designated by numerals with the first number referring to the age of the tree before transplanting and the second number designating the number of years in transplant. Thus, a one-year-old tree would be a 1-0, and a three-year-old transplant would be 2-1. The total of the two numbers will equal the age of the tree. Trees assume their new classification at the end of the growing season, and carry through the winter season this designation until they are distributed the following spring.

The Nursery Cost Report is divided into three parts: (1) Exhibit A and Schedules show the cost of the various nursery functions; (2) Exhibit and Schedules show the cumulative cost of raising trees on inventory as of June 30, 1978; (3) Exhibit C and Schedules show the cost of trees sold during the fall of 1977 and the spring of 1978. The costs in Exhibit C do not include the cost of distribution since these costs vary according to the type of distribution. To determine the cost of packaged trees ready for shipment, the distribution costs from Schedule A-4 must be added to the cost shown in Exhibit C. This total is shown in Table I. Similarly, the cost of bulk baled trees is determined by adding the distribution costs from Schedule A-5 to the cost shown in Exhibit C. This total is shown in Table II.

Lifting, packaging, and bulk baling costs are weighted by age class based on a time study made several years ago. The following multiples were determined:

| <u>Age Class</u> | <u>Lifting</u> | <u>Bulk Baling And Packaging</u> |
|-------------------|----------------|----------------------------------|
| 2-0 | 20 | 20 |
| 3-0 | 30 | 25 |
| 2-2 (transplants) | 40 | 40 |
| Hardwoods | 30 | 25 |

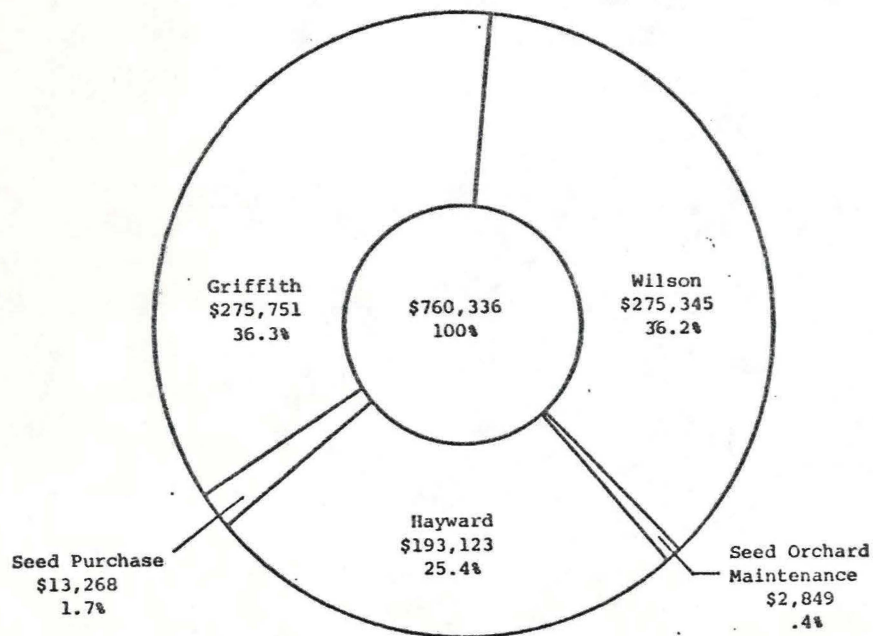
The development of cost figures is based primarily on time reports submitted by Nursery personnel. The data as reported by personnel is summarized for cost purposes, but is not audited for correct reporting by function.

NURSERIES

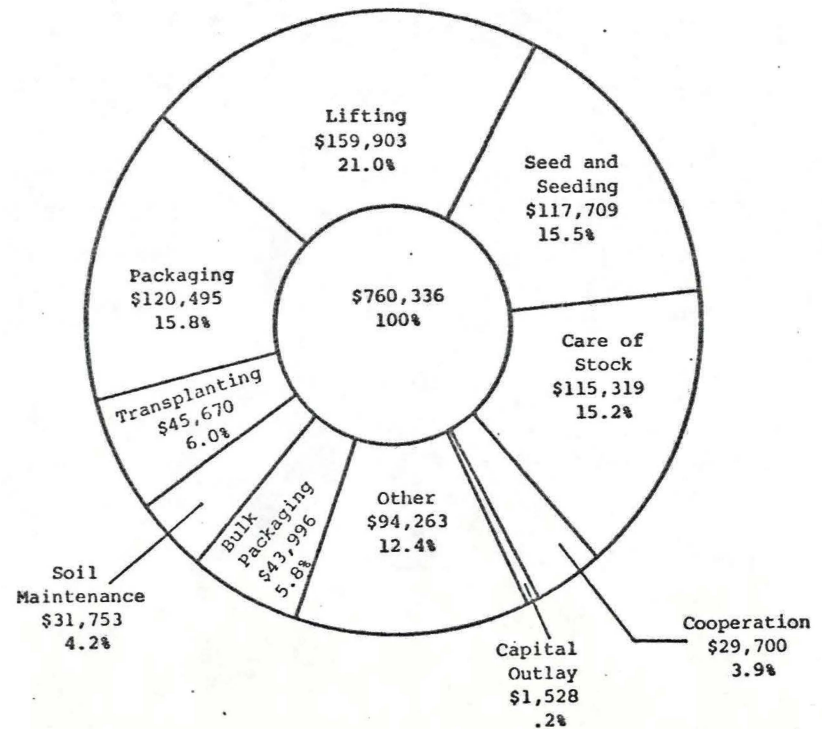
1977-78

CHART I

WHERE THE NURSERY DOLLAR IS SPENT



HOW THE NURSERY DOLLAR IS SPENT



Cost To Grow Trees Distributed At Griffith Nursery
1977-1978

SCHEDULE C-2

| | | 1 | 2 | 3 | 4 |
|----|-----------------|----------|-----------------------|------------|----|
| | | No. of M | Total Cost To Grow | Cost Per M | |
| 1 | 2-0 Seedlings | | | | |
| 2 | Red Pine | 764.0 | \$ 631828 | \$ 827 | 2 |
| 3 | Jack Pine | 91.6 | 60090 | 656 | 3 |
| 4 | White Spruce | 75.0 | 43950 | 586 | 4 |
| 5 | European Larch | 8.9 | 61864 | 6951 | 5 |
| 6 | | | | | 6 |
| 7 | Total | 939.5 | \$ 797732 | \$ 849 | 7 |
| 8 | | | | | 8 |
| 9 | 3-0 Seedlings | | | | 9 |
| 10 | Red Pine | 4514.0 | \$ 4138039 | \$ 917 | 10 |
| 11 | White Pine | 127.6 | 447748 | 3509 | 11 |
| 12 | Norway Spruce | 133.6 | 228322 | 1709 | 12 |
| 13 | White Spruce | 35.8 | 95944 | 2680 | 13 |
| 14 | White Cedar | 53.3 | 109905 | 2062 | 14 |
| 15 | | | | | 15 |
| 16 | Total | 4864.3 | \$ 5019958 | \$ 1032 | 16 |
| 17 | | | | | 17 |
| 18 | 2-1 Transplants | | | | 18 |
| 19 | White Pine | 209.8 | \$ 1422128 | \$ 6778 | 19 |
| 20 | | | | | 20 |
| 21 | Total | 209.8 | \$ 1422128 | \$ 6778 | 21 |
| 22 | | | | | 22 |
| 23 | 2-2 Transplants | | | | 23 |
| 24 | White Spruce | 190.5 | \$ 858584 | \$ 4507 | 24 |
| 25 | | | | | 25 |
| 26 | Total | 190.5 | \$ 858584 | \$ 4507 | 26 |
| 27 | | | | | 27 |
| 28 | HARDWOODS | | | | 28 |
| 29 | 1-0 Seedlings | | | | 29 |
| 30 | Red Oak | 18.4 | \$ 71208 | \$ 3870 | 30 |
| 31 | | | | | 31 |
| 32 | Total | 18.4 | \$ 71208 | \$ 3870 | 32 |
| 33 | | | | | 33 |
| 34 | 2-0 Seedlings | | | | 34 |
| 35 | Green Ash | 25.9 | \$ 120746 | \$ 4662 | 35 |
| 36 | Red Oak | 11.2 | 34221 | 3055 | 36 |
| 37 | White Oak | 3.6 | 42599 | 11833 | 37 |
| 38 | Total | 40.7 | \$ 197566 | \$ 4854 | 38 |
| 39 | 3-0 Seedlings | | | | 39 |
| 40 | Hard Maple | 17.2 | \$ 149881 | \$ 8714 | 40 |
| | Total | 17.2 | \$ 149881 | \$ 8714 | |

Cost To Grow Trees Distributed At Hayward Nursery SCHEDULE C-3
1977- 1978

| | | 1 | 2 | 3 | 4 |
|----|-----------------|---------|-----------------------|------------|---|
| | | No of m | Total Cost To Grow | Cost Per m | |
| 1 | 2-0 Seedlings | | | | |
| 2 | Red Pine | 386.0 | \$ 3914.04 | \$ 10.14 | |
| 3 | Jack Pine | 70.0 | 521.77 | 7.45 | |
| 4 | European Larch | 25.0 | 461.50 | 18.46 | |
| 5 | | | | | |
| 6 | Total | 481.0 | \$ 4897.31 | \$ 10.18 | |
| 7 | | | | | |
| 8 | 3-0 Seedlings | | | | |
| 9 | Red Pine | 3789.0 | \$ 33684.21 | \$ 8.89 | |
| 10 | White Pine | 55.0 | 539.00 | 9.80 | |
| 11 | Norway Spruce | 60.0 | 761.40 | 12.69 | |
| 12 | White Spruce | 427.0 | 4624.41 | 10.83 | |
| 13 | White Cedar | 6.0 | 532.68 | 88.78 | |
| 14 | | | | | |
| 15 | Total | 4337.0 | \$ 40141.70 | \$ 9.26 | |
| 16 | | | | | |
| 17 | 2-1 Transplants | | | | |
| 18 | White Pine | 42.0 | \$ 2805.18 | \$ 66.79 | |
| 19 | | | | | |
| 20 | Total | 42.0 | \$ 2805.18 | \$ 66.79 | |
| 21 | | | | | |
| 22 | 2-2 Transplants | | | | |
| 23 | White Spruce | 201.0 | \$ 11505.24 | \$ 57.24 | |
| 24 | | | | | |
| 25 | Total | 201.0 | \$ 11505.24 | \$ 57.24 | |
| 26 | | | | | |
| 27 | HARDWOODS | | | | |
| 28 | 1-0 Seedlings | | | | |
| 29 | Red Oak | 9.0 | \$ 140.76 | \$ 15.64 | |
| 30 | | | | | |
| 31 | Total | 9.0 | \$ 140.76 | \$ 15.64 | |
| 32 | | | | | |
| 33 | 2-0 Seedlings | | | | |
| 34 | Red Oak | 20.0 | \$ 565.80 | \$ 28.29 | |
| 35 | White Ash | 16.0 | 631.66 | 39.48 | |
| 36 | | | | | |
| 37 | Total | 36.0 | \$ 1197.46 | \$ 33.26 | |
| 38 | | | | | |
| 39 | 3-0 Seedlings | | | | |
| 40 | Hard Maple | 28.0 | \$ 1157.24 | \$ 41.33 | |
| | Total | 28.0 | \$ 1157.24 | \$ 41.33 | |

Cost To Grow Trees Distributed At Wilson Nursery SCHEDULEC-
1977-1978 Page 1 of 2

| | | 1 | 2 | 3 | 4 |
|----|-----------------|---------|-----------------------|------------|----|
| | | No of m | Total Cost To Grow | Cost Per m | |
| 1 | 2-0 Seedlings | | | | 1 |
| 2 | Red Pine | 387.5 | \$ 2294.00 | \$ 5.92 | 2 |
| 3 | White Pine | .3 | 2.05 | .683 | 3 |
| 4 | Jack Pine | 33.9 | 235.61 | .695 | 4 |
| 5 | Norway Spruce | .3 | 2.54 | .846 | 5 |
| 6 | White Spruce | .3 | 2.82 | .940 | 6 |
| 7 | European Larch | .7 | 75.84 | 108.34 | 7 |
| 8 | | | | | 8 |
| 9 | Total | 423.0 | \$ 2612.86 | \$ 6.18 | 9 |
| 10 | | | | | 10 |
| 11 | 3-0 Seedlings | | | | 11 |
| 12 | Red Pine | 881.3 | \$ 15816.62 | \$ 17.95 | 12 |
| 13 | White Pine | 139.5 | 7835.72 | 56.17 | 13 |
| 14 | Norway Spruce | 111.8 | 1271.17 | 11.37 | 14 |
| 15 | White Spruce | 171.6 | 1930.50 | 11.25 | 15 |
| 16 | White Cedar | 140.1 | 1113.80 | 7.95 | 16 |
| 17 | | | | | 17 |
| 18 | Total | 1444.3 | \$ 27967.81 | \$ 19.36 | 18 |
| 19 | | | | | 19 |
| 20 | 2-1 Transplants | | | | 20 |
| 21 | White Pine | 19.1 | \$ 903.24 | \$ 47.29 | 21 |
| 22 | | | | | 22 |
| 23 | Total | 19.1 | \$ 903.24 | \$ 47.29 | 23 |
| 24 | | | | | 24 |
| 25 | 2-2 Transplants | | | | 25 |
| 26 | White Spruce | 101.9 | \$ 3334.17 | \$ 32.72 | 26 |
| 27 | | | | | 27 |
| 28 | Total | 101.9 | \$ 3334.17 | \$ 32.72 | 28 |
| 29 | | | | | 29 |
| 30 | HARD WOODS | | | | 30 |
| 31 | | | | | 31 |
| 32 | 1-0 Seedlings | | | | 32 |
| 33 | Black Walnut | 567.8 | \$ 21048.35 | \$ 37.07 | 33 |
| 34 | Red Oak | 46.2 | 1235.85 | 26.75 | 34 |
| 35 | | | | | 35 |
| 36 | Total | 614.0 | \$ 22284.20 | \$ 36.29 | 36 |
| 37 | | | | | 37 |
| 38 | | | | | 38 |
| 39 | | | | | 39 |
| 40 | | | | | 40 |

Cost To Grow Trees Distributed At Wilson Nursery
1977-1978

SCHEDULE C-1
Page 2 of 2

| | | 1 | 2 | 3 | 4 |
|----|-----------------|---------|-----------------------|------------|----|
| | | No of M | Total Cost To Grow | Cost Per M | |
| 1 | HARD WOODS | | | | 1 |
| 2 | 2-0 Seedlings | | | | 2 |
| 3 | White Oak | 22.8 | \$ 751.49 | \$ 32.96 | 3 |
| 4 | White Ash | 21.7 | 473.71 | 21.83 | 4 |
| 5 | Red Oak | 5.0 | 249.17 | 49.83 | 5 |
| 6 | Basswood | 3 | 184 | 613 | 6 |
| 7 | | | | | 7 |
| 8 | Total | 49.8 | \$ 1476.21 | \$ 29.64 | 8 |
| 9 | | | | | 9 |
| 10 | 3-0 Seedlings | | | | 10 |
| 11 | Hard Maple | 28.8 | \$ 1038.24 | \$ 36.05 | 11 |
| 12 | | | | | 12 |
| 13 | Total | 28.8 | \$ 1038.24 | \$ 36.05 | 13 |
| 14 | | | | | 14 |
| 15 | | | | | 15 |
| 16 | Flame Seedlings | | | | 16 |
| 17 | | | | | 17 |
| 18 | 1-0 Seedlings | 676.4 | \$ 14272.04 | \$ 21.10 | 18 |
| 19 | | | | | 19 |
| 20 | 2-0 Seedlings | 86.6 | \$ 1576.12 | 18.30 | 20 |
| 21 | | | | | 21 |
| 22 | | | | | 22 |
| 23 | | | | | 23 |
| 24 | | | | | 24 |
| 25 | | | | | 25 |
| 26 | | | | | 26 |
| 27 | | | | | 27 |
| 28 | | | | | 28 |
| 29 | | | | | 29 |
| 30 | | | | | 30 |
| 31 | | | | | 31 |
| 32 | | | | | 32 |
| 33 | | | | | 33 |
| 34 | | | | | 34 |
| 35 | | | | | 35 |
| 36 | | | | | 36 |
| 37 | | | | | 37 |
| 38 | | | | | 38 |
| 39 | | | | | 39 |
| 40 | | | | | 40 |

Reconciliation Between General Ledger

And Cost Report

1977 - 1978

[illegible]

Man Years Worked By Function
1977-1978

| | | | | | TOTAL MAN YEARS | | |
|----|-----------------------------|--------|----------|---------|-----------------|-----------|------|
| | | Wilson | Driffitt | Hayward | 1977-1978 | 1976-1977 | |
| 1 | Care of Stock | | | | | | |
| 2 | Conifers | 15 | 209 | 93 | 317 | 480 | 498 |
| 3 | Hardwoods | 13 | 10 | 08 | 33 | 40 | 41 |
| 4 | Shrubs | 29 | 04 | 02 | 35 | 22 | 23 |
| 5 | Transplants | 10 | 25 | 10 | 45 | 58 | 65 |
| 6 | | | | | | | |
| 7 | Seeding | | | | | | |
| 8 | Conifers | 66 | 118 | 122 | 306 | 238 | 269 |
| 9 | Hardwoods | 36 | 20 | 10 | 66 | 77 | 74 |
| 10 | Shrubs | 24 | 05 | 02 | 31 | 32 | 29 |
| 11 | | | | | | | |
| 12 | Transplanting | 18 | 112 | 63 | 223 | 138 | 138 |
| 13 | | | | | | | |
| 14 | Lifting | | | | | | |
| 15 | Trees | 200 | 297 | 260 | 757 | 602 | 682 |
| 16 | Shrubs | 97 | | | 97 | 96 | 94 |
| 17 | | | | | | | |
| 18 | Packaging | | | | | | |
| 19 | Trees | 274 | 221 | 116 | 611 | 258 | 943 |
| 20 | Shrubs | 46 | 05 | 02 | 53 | 50 | 58 |
| 21 | | | | | | | |
| 22 | Bulk Packaging | 64 | 82 | 85 | 231 | 224 | 320 |
| 23 | Soil Maintenance | 31 | 55 | 32 | 121 | 133 | 127 |
| 24 | Seed Storage & Distribution | 60 | 01 | 41 | 128 | 20 | 81 |
| 25 | Nursery Tree Inventory | 32 | 29 | 10 | 71 | 72 | 13 |
| 26 | | | | | | | |
| 27 | Cooperation | | | | | | |
| 28 | Department | 21 | 35 | 08 | 84 | 118 | 122 |
| 29 | Other Agencies | 10 | 02 | | 12 | 14 | 15 |
| 30 | | | | | | | |
| 31 | Other | 72 | 01 | 10 | 103 | 126 | 87 |
| 32 | Sickened | 386 | 559 | 184 | 1129 | 1148 | 1116 |
| 33 | Leave | 152 | 126 | 98 | 376 | 358 | 406 |
| 34 | | | | | | | |
| 35 | TOTAL 1977-78 | 1769 | 1318 | 1202 | 4289 | | |
| 36 | | | | | | | |
| 37 | TOTAL 1976-77 | 1832 | 1370 | 1175 | | 4977 | |
| 38 | | | | | | | |
| 39 | TOTAL 1976 | 1827 | 2061 | 1339 | | | 5287 |
| 40 | | | | | | | |